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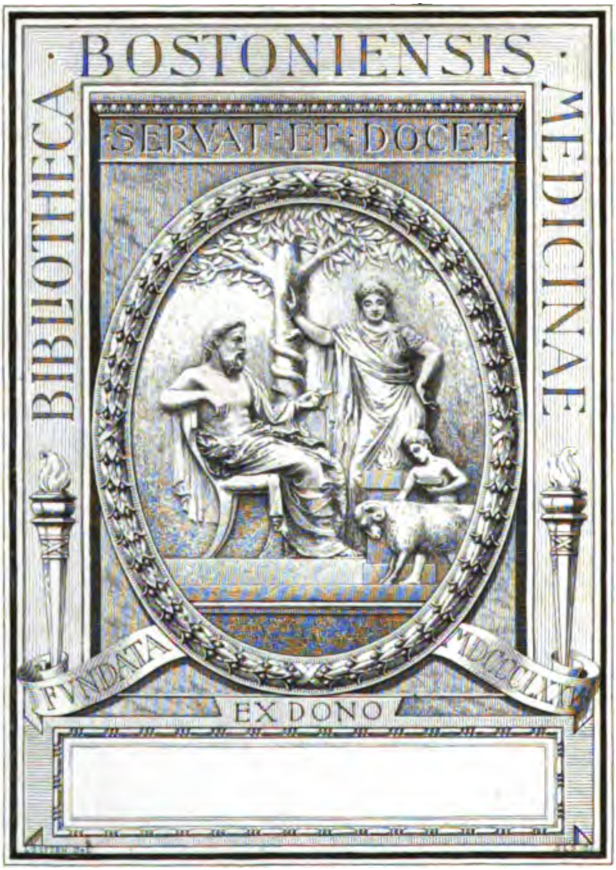

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THOMAS KIRKPATRICK MONRO, M.D.,

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ORIGINAL ARTICLES.

MOVABLE DISPLACEMENTS OF THE KIDNEY.

By DAVID NEWMAN, M.D., F.F.P.S.G.,
Surgeon, Glasgow Royal Infirmary.

(*Continued from* p. 430, vol. lxi.)

In discussing the etiology and pathogenesis of movable kidney, I shall first state a few facts in relationship to statistics, thereafter review the various opinions which have been offered to explain the occurrence of the malady, and then shortly criticise the various views advanced.

The *etiology* and *pathogenesis* of movable kidney is still uncertain. The first question to ascertain is the relative frequency of the disease, but this is by no means so easy as may appear at first sight. The statistics from *post-mortem* records, although collected with great labour, are of little value. Even in well-marked cases, movable kidney is apt to escape observation after death, especially when it is the habit of the pathologist to remove the kidneys before the intestine, unless his attention be specially directed to the point. Hence the search in reports of autopsies gives one result, the inspection of dead bodies by one interested in the subject a very different record. A set of statistics I compiled gives 15 cases of movable kidney in 16,479 inspections. Ebstein and Neumann, whose figures are based upon 14,698 autopsies, record only 16 cases. My own observations in the inspection room of the Glasgow Royal Infirmary, while I was pathologist, give a percentage of 1·8 cases in which the kidneys were movable through an area of more than 3 inches. Movement was most frequently observed on the right side, and usually was associated with emaciation of the body, a lax condition of the abdominal walls, and a looseness of the attachments and lengthening of the mesocolon on the right side, sometimes accompanied by lengthening of the renal vessels.

In estimating the frequency of movable kidney as observed in autopsies, it is well to remember a possible fallacy arising from the circumstance that the adipose tissue around the kidney becomes firm after death, so that, even in cases where the kidney was movable during life, it may become so fixed after death as to escape observation.

The frequency of movable kidney as observed during life gives a very different result from those just enumerated. It is variously stated by different writers, and seems to depend considerably upon the nature of the practice the observer is engaged in. Probably the two extremes are represented by Lindner on the one hand, who finds symptoms of movable kidney in every third or fourth woman he examines, and Senator on the other; he states the relative frequency as 1 case in 139 women patients. Küster says, "I possess now exact notes during my practice in Berlin, of which a considerable part were gynæcological cases and also surgical. These notes treat of nearly a period of three years, from the end of 1887 to the autumn of 1890, and describe the cases of 1,733 persons, 44 being movable kidney, giving 1 case of movable kidney in 39-40 patients. These 1,733 persons were 828 males, among whom 4 cases of movable kidney were observed, and 905 females, with no fewer than 40 cases suffering from that complaint, being 1 movable kidney in 207 among the males and 1 for every 22 persons among the females."

Edibohls records 90 cases in 500 women, and Mathieu, out of 306 women examined in hospitals, found movable kidney in 85, or 27 per cent. Glénard gives the percentage at 22. Lindner and Küttner put the percentage in women at 20. In 1,422 whom he examined, Skorczewsky found that 32 females out of 1,030, and 3 males out 392, suffered from movable kidney. In 19 patients—2 males and 17 females (9 of whom were primiparæ and multiparæ)—the right kidney was movable; and in 11 patients—1 male and 10 females (6 of whom were primiparæ and multiparæ)—the left kidney was movable. Both kidneys were movable in 5 primparæ. That is to say, over all the cases examined, 2·5 per cent suffered from movable kidney; and in women alone 3·2 per cent, and in men alone 0·8 per cent. According to Oser, of Vienna, among the poor in Austria 10 per cent of the women who have borne children are affected.

In the cases which have come under my own observation, 86 per cent were in women and 14 per cent in men. Morris states that his own operation list shows 98 operations for movable kidneys, 88 being performed upon women and 10 on men; thus only 11·3 per cent were males, or 1 male to every 8·8 females. According to Landau, both kidneys are involved in about 5 per cent of the cases.

In my experience, 8 per cent, or about 1 in 12, is nearer the mark. In women, the age at which this affection is most frequently met with corresponds to the child-bearing period and a few years succeeding it; thus, about 46 per cent of the cases were observed between the ages of 30 and 40 years, and 20 per cent from 40 to 50 years of age, and in all 81 per cent between the ages of 20 and 50.

Küster's results are a little different from these. He gives the following table:—

11–20 years,	4 cases.
21–30 „	25 „
31–40 „	36 „
41–50 „	25 „
51–60 „	10 „
61–70 „	1 „
Total,	101 „

And he remarks, "We find in these numbers that movable kidneys are *not* often found in people under 20, between 20 and 40 it is most frequent, and after 50 rare. Ebstein draws the following conclusion, that movable kidney is to be most frequently found at the period when women give birth. If I had anticipated that result of the discussion, I would rather have said that the frequent appearance of the malady is at that period in which vanity rules in women, and in which, among the working classes, the greatest wearing out of the body takes place. Those cases after 50 years have either been undiscovered for years, or have been discovered by chance."

The youngest child I have operated upon for movable kidney was a patient of Dr. Archibald Brown's, aged 7 years, who also suffered from transitory hydronephrosis, and I have seen only other two cases under 10 years and other two between 10 and 20. Stiller also has observed cases in children below the age of 10; Rosenthal has collected twenty-six cases in young girls, and Guyon, Guinon, and Comby have also collected similar cases. Schutze has fully described three cases—one, that of a child, 6 months old, which undoubtedly was a congenital displacement. The remaining two were in children under 10 years. In early life, Steiner saw the same malady three times, Reiss in Copenhagen once, and Keppler once. Lastly, Desnos and Barié noticed a left-sided movable kidney in a girl of 19 years of age, the cause of which was traced to a fall on the left side at the age of 2 years.

It is, therefore, clear that clinical examination of the abdomen reveals a very different result from what is gathered from *post-mortem* inspection. Probably this is due to the more careful examination during life, and to the fact, to which I have already alluded, that after death the adipose tissue becomes firm and fixes the kidney in the position it occupied at the time of death.

The more important facts said to be revealed by statistics, in respect to the causation of movable kidney, are, firstly, that the large majority of the cases are females, and that they have not only been the mothers of large families, but that the pregnancies followed one another in rapid succession; secondly, that many of the patients, previous to the kidney becoming movable, from some cause or another have rapidly emaciated; thirdly, that the right kidney is more prone to displacement than the left; and, fourthly, that displacement of the kidney is frequently associated with diseases of the female generative organs.

What, then, are the explanations which have been offered? Let us consider the first assertion, namely, that females are most liable to this disease, especially those who have borne large families. The undue proportion of female cases, and the period at which the malady is most commonly seen, seem all to indicate that *pregnancy* has something to do with the production of the affection, either by causing an undue looseness of the abdominal walls, either as an effect of the expanding or contracting uterus, or by the spasmodic voluntary muscular efforts during parturition.

In my book on *Surgical Diseases of the Kidney* I argued as follows:—"In the upper and middle classes of society, women, after delivery, usually retain the recumbent posture for some time—long enough to allow the abdominal walls to regain their firmness and elasticity. It is otherwise with the poorer classes: they require, from necessity, to resume their occupations as soon as possible, not unfrequently within a short time after delivery, without proper regard to their condition. Now, it is persons in this very class who are most subject to displacement of the kidney. The great majority of the patients whom I have seen suffering from these diseases were poor, and had been subjected to the conditions just mentioned. In many instances the pregnancies succeeded one another so rapidly that the mother had no time to recover between these periods, and, consequently, progressive emaciation resulted. In such cases the peritoneum becomes stretched and flaccid, its union with the posterior abdominal wall loosened, and by the flaccid condition of the anterior abdominal muscles, pendulous belly ensued, the intra-abdominal pressure was thereby reduced, and so the kidneys practically came to be suspended by their anatomical attachments, which were rendered unable to fulfil their function properly." . . .

"Repeated pregnancies are said to cause movable kidney in two ways: by inducing pendulous belly, and thereby diminished intra-abdominal pressure, and by causing emaciation of the abdominal adipose tissue, and consequently decreased bulk of the adipose capsule of the kidney. The tunica adiposa deprived of its fat, the areolar tissue becomes loose, and its attachments to the kidney on the one hand, and to the surrounding parts on the other, become less firm than normal. When the emaciation is slow, a certain amount of accommodation may doubtless take place; but when it is rapid, movable kidney is very likely to result." My later and fuller experience has induced me to doubt the importance of pregnancy as an etiological factor. Of this I have more to say.

From the circumstance that, during the *menstrual period*, in many cases of movable kidney the symptoms are aggravated—the patient suffering from increased renal pain, sense of weight and dragging, and an augmentation in the size of the organ—some observers have been induced to believe that congestion of the kidney during the catamenia is a cause of displacement. It has been asserted that the kidney becomes congested, increased in weight and volume, and that its attachments, are thereby stretched during this period; after menstruation the congestion subsides, and the kidney regains its original size and weight. Doubtless, clinical observation shows, and anatomical research has proved, the intimate relationship existing between menstruation and the vascular supply to the kidney; but while this fact cannot be denied, it would be rash to assert that there is any intimate etiological relationship between the two conditions.

Dr. Sawyer proposed this theory for explaining the production of movable kidney. In the cases which he has seen, he has noticed the relationship existing between the menstrual period and the time when movement of the kidney commences. Herczel attaches some importance to the hyperæmia of the kidney during the monthly period, and Dr. Gueneau de Mussy adopts the same view, but adds, however, that while he quite recognises that congestion may supervene—sometimes as a pathological condition, and sometimes as an epiphenomenon in the malady we are now considering—it must be admitted to be neither a constant cause nor a necessary complication, because movable kidneys are not uncommon in men. In many cases I have certainly seen an increase in the severity of the symptoms during the menstrual periods. In several which during the intervals the kidney seldom troubled the patient, at the illnesses the kidney was sure to become displaced and give rise to severe symptoms. In all cases the organ was increased in size and weight at these periods, and some patients, without the idea being suggested to them, remarked that they thought that their kidneys were heavier when they were ill. Glénard and Tuffier consider the painful movable kidney as only one indication of a general defect, and associated with a general lax condition of the attachments of other abdominal organs.

Becquet, Lancereaux, and Fourrier, as well as many others, admit the influence that menstruation has in the production of movable kidney; but Landau, though he admits the truth and value of Virchow's investigations, showing the close connection between the renal and uterine vascular supply, denies the direct relation of cause and effect between menstruation and movable kidney, because he thinks if the theory be true, "no woman who menstruates should fail to have a movable kidney." In saying so, Landau seems desirous of exalting his own theories by depreciating those of others.

By many writers on the subject great importance has been attached to the circumstance that in their experience *displacements or disease of the generative organs* are associated with movable kidney. When it is remembered that almost all the observers referred to are gynæcologists, the importance of the seeming relationship disappears.

It has been inferred that displacement of the uterus may act in two ways upon the kidney. It may, if prolapsed, drag upon the fundus of the bladder, and, through the ureters, upon the kidney; or, by causing torsion of the lower end of the ureters, it may impede the passage of urine, and cause an accumulation within the pelvis of the kidney. This increase in weight, with alternate distensions and relaxation of the renal attachments, leads to displacement.

Landau and Becquet emphasise the importance of disease of the uterus and bladder in the production of movable kidney, and Heller has tried to prove by experiments that these organs, when displaced downwards, drag the kidneys from their normal position. Bartel was the first observer to direct attention to the co-existence of dilatation of the stomach, and Litten, in forty cases, found that twenty-two also suffered from displaced kidney.

Emaciation is an important factor in the etiology of movable kidney, and by inducing absorption of fat repeated pregnancies may in two ways predispose to the disease—by inducing pendulous belly, and thereby diminished intra-abdominal pressure, and by causing emaciation of the abdominal adipose tissue, and, consequently, decreased bulk of the adipose capsule of the kidney. The tunica adiposa deprived of its fat, the areolar tissue becomes loose, and its attachments to the kidney on the one hand, and to the surrounding parts on the other, become less firm than normal. When the emaciation is slow, a certain amount of accommodation may doubtless take place, but when it is rapid, movable kidney is very likely to result.

Emaciation may, however, lead to movable kidney independently of pregnancy. Some years ago, I paid special attention to the extent of movement to which the kidney is capable in emaciated patients. In examining the cadaver I have found that, in the great majority of rapidly emaciating diseases, considerable movement of the organs is permitted. This was specially the case in such affections as acute phthisis, and in suppurative diseases generally.

As long ago as 1857, Oppolzer noticed that in patients suffering from movable kidney and dying from other diseases, the kidneys, when examined, were found to be healthy, but in these cases "there has been observable a deficiency in the cushion of fat and a lengthening of the renal vessels," and Dr. Adams published in the same year a letter in which he said, "I remember many years ago having been requested by

Dr. Langmore to examine the body of an old lady who was said then to have 'slipped her kidney.' . . . The only peculiarity remarkable was that the kidney appeared bound down in its situation more loosely than usual, and the old lady, from having been very fat, had become somewhat thinner, and her integuments appeared very lax throughout. The condition of the kidney had nothing whatever to do with the cause of death." There is little doubt that an absorption of the fat surrounding the kidney will render the tunica adiposa more lax and loosen the attachments of the organ, stretch the renal vessels, and permit undue freedom of movement and prominence of the kidney. When emaciation has been very rapid, I have seen the kidneys so loosely attached that they could be easily drawn out in front of the spine without employing force sufficient to injure the connections. Even in patients who are not greatly emaciated in other parts, there may be a deficiency of the perirenal fat which undoubtedly conduces to movable kidney.

Dietl has drawn attention to the circumstance that the disappearance of the body fat is frequently a forerunner of the absorption of the perirenal fat. This is most noticeable in feverish maladies. It is also to be observed that, while the renal fat is the last to disappear during the acute stage of fevers, it is the quickest to return in convalescence. During that period, the patient is kept at rest in bed, the fatless kidney becomes fatted, and, before the general health is recovered, the normal padding of the kidney is well restored.

The *narrowness of the lower segment of the thorax* in women has been considered an important cause of movable kidney, and by some observers is supposed to be the reason of the prevalence of the disease in the sex. Weisker, Walkow, and Delitz have tried to demonstrate that in all cases of movable kidney there is a certain deviation from normal in the conformation of the posterior abdominal wall, and seek to show that the prevertebral niches in which the kidneys lie are unusually shallow, and thus favour displacement of the organ. I have looked into this question carefully, and have failed to see what they have seen. Becker and Lenhoff assert, they found in those who suffered from movable kidney, that the least abdominal circumference was smaller in proportion to the height of the individual than normal. M. L. Harris, in a recently published article in the *Journal of the American Medical Association*, discusses this question, and one of the conclusions he draws at the end of his paper is—"Movable kidneys occur in women with a particular body form, and practically all women with this body form have movable kidneys of greater or less degree."

Dr. C. Mansell Moullin, in the *British Medical Journal,* 10th March, 1900, makes the following remarks:—"The kidneys are maintained in position partly by the pressure in the extra-peritoneal space, partly by the way in which they fit into the lumbar recesses. Neither of these is sufficient without the other. Walkow and Delitz, in particular, have drawn attention to the importance of the shape of the lumbar recesses. This is best shown by taking plaster casts of the posterior wall of the abdomen while the body is suspended vertically. In the male, they are deep, narrow, and pear-shaped, with the narrow end below. In the female, owing to the greater width of the pelvis, they are shallower and more cylindrical; and the difference in shape is almost always more marked upon the right side than upon the left. This I believe to be due to a slight degree of torsion of the lumbar spine. In right-handed people, there is usually a slight convexity towards the right in the dorsal spine. This entails an equivalent convexity towards the left in the lumbar region, and this, in its turn, necessitates a slight degree of rotation. The left transverse processes rotate backwards, and deepen the lumbar recess upon that side. The right rotate forwards, and make the lumbar recess proportionately more shallow.

"In a very large number of cases of movable kidney, there is definite flattening of the right lumbar region. This, of course, cannot possibly be due to absence of the right kidney. Abdominal nephrectomy does not cause it. It really means that the vertebræ have rotated slightly, and is an indication of the cause of the displacement of the kidney, not a consequence of it.

"The width of the lumbar recesses is one of the penalties which have followed the assumption of the erect attitude. If the history of the development of the renal organs in the race, as well as in the individual, is worked out, it is seen that, originally, they were distributed over the whole length of the head and body; and that by degrees, as their function became more specialised, they became concentrated together until, in their most perfect form, they constitute a pair of organs which, in the quadrupedal mammalia, are placed in a position of the greatest possible security. They lie close to the spine, immediately under the anticlinal vertebræ, almost in the central axis around which all movement of the trunk and limbs takes place. They are buried in two deep and narrow recesses, protected by the lower ribs, and rest upon a horizontal sheet of fascia, which in its turn rests upon the peritoneal viscera. The slight degree of backward and forward movement which is necessitated by the action of the diaphragm takes place without the least risk, but with the assumption of the erect attitude, the greater portion of this security is lost. The backward and forward movement is altered to movement upwards and downwards, in the direction of the line of gravity. The peritoneal viscera and the supporting fascia lie in front, and not below. The lumbar recesses, instead of being deep and narrow, become broad. The convexity forwards of the lumbar spine helps to make them still more shallow. The pelvis, especially in the female sex, becomes wider, so that the lower end of the recess becomes more open, and then the development of right-handedness causes the transverse processes of the lumbar vertebræ, which lie under the floor of the lumbar recess, to rotate. From a position of the greatest safety, the kidneys are placed in one from which all security is gone; and it is not to be wondered at that comparatively trivial causes—an increase in the weight of the organ without a corresponding increase in the bulk, a sudden violent jerk, or a great lowering of the intra-abdominal pressure—can increase their normal range of mobility. The wonder is not that movable kidney occurs, but that it does not occur more often."

In reply to this theory, it may be pointed out that the amount of rotation of the lumbar vertebræ is very restricted, and that movable kidney is most common in a class of patients in which their occupation does not involve right to left movements, whereas it is rare in others, such as mowers, joiners, and engineers, who are constantly working in a way to demand extreme and continuous movement of the body, with rotation from right to left.

The greater frequency of movable kidney on the right side seems, to some extent, to depend upon the difference in their *mode of attachment.*

Landau was the first to direct special attention to this point. He writes as follows:—

"1. The *upper end of the descending colon* lies higher, and is attached to the ribs further to the left and further down (*seitlicher und tiefer*), than the ascending colon. Whereas the ascending colon lies against the middle of the right kidney, the descending colon lies against the external convex border of the kidney. Hence it follows that the left kidney, although placed on the same horizontal level as the right, is fastened to the posterior abdominal wall both higher up and more firmly (*höher hinauf und stärker*) than the right.

"2. The *descending colon* and the *splenic flexure* are tauter (*straffer*) and shorter in their attachment to the posterior abdominal wall than the *ascending colon* and *hepatic flexure;* in other words, the mesocolon of the splenic flexure is shorter and tauter than that of the hepatic flexure. This indirect means of attachment is, therefore, stronger on the left than on the right.

"3. The ascending colon does not form a right angle with the *transverse colon* as the *descending colon* does, but an obtuse angle, or even forms a dependent loop before passing into the transverse colon.

"The reason for this peculiar behaviour of the ascending colon, which I have seen a few times in children and many times in adults, and which Sappey has described as normal, appears to me to be the upward movement of the fæces in the ascending colon, contrary to the action of gravity, and only effected by the peristaltic movements of the bowel. By this means the spot where the ascending becomes the transverse colon is gradually dragged downwards so much as to form in extreme cases a fairly long loop, though it usually passes obliquely or with a curve into the transverse colon.

"But during the passage of the fæces from the transverse into the descending colon, the weight of the column of fæces and peristaltic action work in the same direction, no stagnation takes place in the splenic flexure, which maintains its original form. This difference between the hepatic and splenic flexures explains also in its turn how the right kidney has more room to descend than the left.

"4. The descent of the left kidney is opposed by the position of its vessels above the inferior or horizontal part of the duodenum. Moreover, the position of the aorta on the left side of the spinal column makes the left renal artery shorter than the right; this shorter attachment by means of the renal artery (which is naturally considered in this capacity before the thin-walled vein) renders the mobility of the left kidney the more restricted. Less stress must be laid on the circumstance pointed out by Oerum-Howitz, that the left suprarenal vein opens into the renal vein, while the right suprarenal vein opens directly into the vena cava, the left kidney (as opposed to the right) having thus an additional indirect connection with its suprarenal body.

"5. The left renal vessels are closely connected by cellular tissue with the head and neck of the pancreas, which thus furnishes an additional attachement to the left kidney, of which the right is destitute; for the right renal vessels lie bare, except for their peritoneal covering."

When considering the question of how the kidneys are retained in their position (vol. lxi, p. 375), I showed the importance of the *inter-abdominal* pressure being maintained. Hertzka, Landau, and Senator hold that the tension of the abdominal parietes gives support to the kidneys, and that when it is withdrawn the kidneys fall down from their normal position. D. T. Cunningham and Kendal Franks show how the kidneys are held in position by the resultant of two forces, the one pressing the glands downwards and backwards, the other pressing it upwards and backwards. This subject has already been fully discussed.

The part which the *liver* plays in causing displacement of the right kidney has now to be considered.

The liver has no doubt been blamed for causing displacement on the right side, either from its own weight or by communicating the diaphragmatic movements. Although I believe the liver is largely to blame, the explanation of Cruveilhier, that displacement arises from the pressure of stays communicated through the liver to the right kidney, seems to me quite untenable. I would rather say that, as far as the pressure of stays is concerned, the right kidney is actually protected by the liver. It must be remembered that the right kidney does not lie below the liver when the body is in the erect posture, but really behind it, the posterior margin of the liver overlapping the kidney fully an inch and a half. The anatomical condition of matters is, therefore, as follows:—The posterior surface of the right kidney is practically in contact with the crura of the diaphragm and the great lumbar muscles, while interposed between its anterior surface and the anterior abdominal wall there is a large solid organ—the liver. Now, suppose that the patient strains the abdominal muscles, as during delivery, or in lifting a heavy weight, both the anterior and posterior abdominal muscles are brought into powerful action, the liver being pressed backwards by the anterior muscles, the kidney pressed downwards by the crura of the diaphragm, and forwards by the posterior abdominal muscles. Now, the resultant of these forces will act in a manner similar to what takes place when one presses a bean between the finger and thumb—that is to say, the kidney will be pressed downwards. This seems to me a more reasonable explanation than any of the others which have been advanced.

I would not, however, for a moment assert that other considerations are not to be entertained, such as the greater length of the renal vessels on the right side, and the fact that the ascending colon is not so firmly bound down to the right as the descending colon is to the left kidney. These and other slight anatomical differences have been made much of by Landau, who seeks to explain the different behaviour of the right and left kidney as regards mobility entirely by the differences in their mode of attachment. The interposition of a solid organ between the anterior and posterior abdominal muscles in the right hypochondrium, and the want of it in the left, fully explain, to my mind, the relative frequency of right and left movable kidney.

The frequency with which movable kidney is associated with disease involving enlargement of the organs cannot be regarded simply as a coincidence. For example, large cystic kidneys, those occupied by a tumour or by a calculus, become displaced probably by reason of their increased weight. Similarly, hydronephrosis may induce displacement, whereas in pyonephrosis the inflammation associated therewith produces adhesions to the surrounding parts.

Some writers, especially Linder, Küttner, Tuffier, and Albarran, believe that movable kidney is due to congenital causes. I have not observed any facts to support such a theory.

The immediate cause of movable kidney may be of a *traumatic* nature. Local injury must be recognised as a cause of movable kidney, as in not a few instances a fall or a blow has originated what Landau terms "luxatio traumatica renis." Rayer, Henock, Le Ray, Feber, Küster, and many others have recorded cases. Case I (vol. lxi, p. 352) was a good example of a fall inducing the displacement, and the following is another:—

CASE VI.—*Movable kidney caused by fall—Symptoms: severe paroxysmal renal pain, sickness and vomiting—No history of hæmaturia—Urine normal between attacks of colic—Operation—Kidney enlarged and engorged with blood—Cure.*

A. B., æt. 53, was sent to me by Dr. George S. Middleton, of Glasgow, whom he consulted along with his family attendant, Dr. James Laurie, of Greenock, in June, 1896, with the history that up till five years ago he enjoyed perfect health. One night he was called suddenly, and, while running on deck, he tripped over a hawser and fell very heavily on his right side, and was conscious at the time of having "twisted himself." The pain in the right lumbar region which followed the accident was severe, and, after lasting for a fortnight or so, gradually improved, but did not entirely disappear. From the time of the injury till two years ago, the patient had always noticed that, if he lay in bed upon his left side, on rising in the morning he suffered from a dull aching pain in the right lumbar region, which only became relieved when he walked about for a quarter of an hour or twenty minutes. Till the summer of 1894 this condition of matters continued, but about that time the pain became much more severe, the attacks were more frequent, and often lasted the greater part of the day, and did not readily disappear on walking about. In 1895, while at San Francisco, he was seized with a severe paroxysm of pain, which came on suddenly in the right renal region, extending down the groin and to the testicle, and was accompanied by severe sickness, sweating, and vomiting. After this first attack, which from his description resembled renal colic, he had several others, and the longest interval between them was two months. Between the paroxysms of acute pain he suffered more or less from the old dull pain in the right renal region. In March, 1896, while in Hull, he suffered from a very severe attack, which lasted for over eight hours. This was the last previous to the operation, but they had become so frequent and severe that he was determined to have something done for his relief.

When examined, the patient was found to be a very well-nourished, healthy-looking man, the muscular development being so good that little could be made out by palpation further than that the muscular resistance was much greater in the right than in the left lumbar region, and pressure over the right kidney caused considerable pain.

The urine was at all times strictly normal when I examined it, but I had no opportunity of seeing it during a severe attack.

I advised an exploration by lumbar incision, to which he consented, and the operation was performed in a private home in Glasgow, in July, 1896.

On exposing the right kidney the cortex was found to be deeply injected with blood; the organ was enlarged and moderately movable. In separating the adipose tunic several large veins were torn, but no torsion of the ureter or vessels could be made out.

The patient made a good recovery.

In 23 per cent of my cases *injury of some kind* has been blamed for the onset of the displacement—sometimes a fall, a kick or blow in the region of the loin, sudden muscular strain or severe pressure against the abdomen and lumbar region, violent horse exercise in women, severe and repeated attacks of coughing, a sudden twist or flexion of the body—to all these undue mobility has been attributed.

We may now shortly criticise the various views which have been brought forward to explain the etiology of movable kidney.

We may summarise the arguments advanced in order to show that *pregnancy* should be admitted as an important etiological factor in the production of movable kidney as follows:—

1. The forced contractions of the diaphragm and the muscles of the abdominal wall, exercised through the liver on the right kidney especially.
2. The sudden loss of intra-abdominal pressure following delivery, resulting from emptying of the uterus and flaccidity of the abdominal walls.
3. Too early resumption of the erect posture after delivery, and of physical labour without proper precautions.

Before the malady attracted much attention at the hands of the general practitioner or the surgeon, many women, mothers of large families, consequent upon rapidly repeated childbirth, found their way to gynæcologists, who generally discovered a lax condition of the abdominal wall, the accompaniment of movable kidney. But now that physicians, as well as surgeons, are fully aware of the importance of careful abdominal examination, the fact has gradually been revealed that movable kidney is very common, and that many unmarried women, and married women without families or with only small ones, suffer from the complaint. Thirty per cent of my adult female cases were unmarried, 8 per cent of the married had no family, and of the remaining 62 per cent only one in seven had a family of over five children.

These facts, I think, militate against the theory of repeated pregnancies being a fruitful cause of movable kidney. It is not an important factor in the production of the displacement, except in so far as it may induce emaciation and diminish abdominal tension. As to the influence exercised by the *catamenia*, I consider it is beyond doubt that there is an intimate connection between the generative organs and the kidneys, as manifested by the increase in the severity of symptoms during the menstrual period, but that the hyperæmia present at these times seriously conduces to displacement of the kidney has not been proved.

That displacement and disease of the generative organs coexist with movable kidney is no reason why they should be regarded in the relationship of cause and effect. The percentage of my cases in which uterine or ovarian disease existed was very small.

Rapid general emaciation and deficiency in the fatty capsule I regard as one of the most important causes of movable kidney, as shown both by clinical observation and by experience in the *post-mortem* room. It is true that in many wasting diseases the kidneys do not become movable—all the perirenal fat may disappear and still the kidney remain fixed; also, that movable kidney is met with in those who are not emaciated. But keeping these facts fully in view, I know that, coincident with other changes, which will be considered later on in connection with the ligamentum suspensorium renis, not deficiency in the fatty capsule, but absorption of fat previously deposited is one of the chief causes of the attachments of the kidney giving way. This does not occur in the acute fevers, where the patient is kept at rest in bed, but rather in connection with diseases which do not prohibit a certain amount of bodily activity.

As I have indicated above, certain writers have attached great importance to what they believe to be deviations from the normal configuration of the posterior abdominal wall. As I have said before, I have looked for the abnormalities they describe, but have failed to find them. One change I have almost always found in operating upon movable kidney is stretching and detachment of the ligamentum suspensorium renis (Figs. V and VI (8 and 12), vol. lxi, pp. 346, 347). The anterior and the posterior lamellæ become separated from one another, and so a considerable sac may be formed in which the kidney moves. At the same time the attachments of the perirenal fascia becomes loosened. This weakness of the ligamentum suspensorium renis I look upon as the chief predisposing cause of movable kidney.

The only other etiological factor worthy of attention is traumatisms. M. L. Harris, in an article to which I have referred above, discusses the influence of trauma, and in the introductory passage he says—"The influence of trauma in the production of movable kidney is a subject of special importance to the railway surgeon who is so frequently called on to decide whether or not a movable kidney in a given case is the result of a certain injury or accident. It is a common belief of the profession, as well as of the laity, that a movable kidney is frequently the result of an injury. Most writers on the subject assign to trauma an important place among the etiologic factors, but few of them, indeed, offer any evidence, such as the report in detail of cases, or of reasoning based on pathologic conditions found, in support of their statements. It is evident, therefore, that the statement has been passed on from one author to another without the subject receiving the careful attention which it deserves." And at page 413 he says—"One will search the literature in vain for a satisfactory case in which a movable kidney was found soon after an injury, and in which the absence of the condition had been previously demonstrated by examination." I need only remark that before meeting with an accident people are not in the habit of submitting themselves for examination for movable kidney, and, without such a demonstration, I think Case I (vol. lxi, p. 352) proves clearly that a movable kidney may result from injury. In fully 23 per cent of my cases a traumatism has been blamed as the cause, but while in some of these full proof has not been supplied, in many others it is clearly demonstrated. Of twenty-one cases which I published in my book on *Surgical Diseases of the Kidney* in 1888 (p. 24), three were traced to falls. No doubt we must be careful in judging the relationship of cause and effect, because many people are very ready to trace their troubles to an injury; but when I find that no symptoms of movable kidney were observed prior to an accident, and that they became manifest soon thereafter, and are associated with the usual physical signs of movable kidney, I consider I am as fully justified in blaming the injury for displacing the kidney as I am in blaming a sudden strain for producing a hernia in a patient who had not previously been ruptured.

(*To be continued.*)

SURGICAL OR TRAUMATIC RHEUMATISM, WITH A NOTE ON THE USE OF CORRIGAN'S BUTTON.[1]

By JAMES WEIR, M.B., C.M.,
Dispensary Surgeon to the Victoria Infirmary, Glasgow.

PERHAPS one of the commonest conditions which medical men are called upon to treat is what might be termed a rheumatoid affection of some muscle, tendon, or joint, subsequent to an injury. It is not a true rheumatism, for it is, as a rule, quite intractable to treatment by the usual rheumatic remedies.

Authorities constantly insist upon, and physicians and surgeons are forever prosecuting, a strict inquiry into the previous history and health of the sufferer, apparently anxious to catch upon any constitutional taint which might guide them in the care of these cases of localised and apparently anomalous pain; and with some reason, too, for chronic pain and stiffness in a joint, muscle, or tendon is, in my own experience, one of the most obstinate affections with which we have to deal in the great class of what might be termed "simple ailments." "Simple" these ailments may be, but they are nevertheless exceedingly harassing, and very far-reaching in the effects they have on the working abilities of the class of workers among which they are so common. These "simple" ailments are, too, the bugbear in prognosticating the ultimate result of most injuries, and materially affect those people who, from the nature of their calling, are seriously interested, on one side or the other, in the Workmen's Compensation and Employers' Liability Acts.

The vagaries of the medical mind are never more demonstrable than in the treatment to which these patients are subjected. One man (deeply imbued with a sense of the miraculousness of cures as recorded in the *Uric Acid Monthly*) must needs feel himself impelled to diagnose the condition to be due to uricæmia, and so sets himself to the solution of the problem, and the omnipresent uric acid, by drenching the sufferers with the kindly alkali, or deafening them with the salicylates, or he pins his faith to thialion as the panacea for uricæmia, the therapeutic ferret which will rid the most inscrutable labyrinths of the human organism of the uric acid vermin. Another imagines, with some reason, too, that he has discovered tuberculous disease in its initial stages, and forthwith the part is swathed in Scott's dressing, while the patient is made to swallow "as much cod liver oil as would float a ship of the line." And as for syphilis, when I have been plunged into an abyss of diagnostic despair, the suspicion of its possible presence hath raised in me new hope, that in it again had I found the *fons et origo mali!*

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[1] Read at a meeting of the Southern Medical Society held on 14th April, 1904.

It is not my intention to utterly deprecate constitutional treatment in these cases, for one frequently does obtain some result from such treatment; but when one has under his care a score or so of people suffering from low rheumatoid symptoms about the region of old injuries, and who are treated conscientiously for those diseases or constitutional conditions in which such symptoms are known to develop, and all to no purpose, so far as relief of pain is concerned, one is perforce compelled to conclude that there are more things in the morbid anatomy of repaired injuries than are yet dreamed of in his philosophy, and to cast around for another fish over which to throw his therapeutic net.

"Surgical" or "traumatic rheumatism" is the term that I have applied to the condition in my notes of cases. The term is not a good, though it is a very convenient, one, inasmuch as it is a pithy statement of a number of facts in the case, and so is suitable for categorical notes, while also the word rheumatism is intelligible to most people, and in some measure agrees with their ideas of the causation of the symptoms; but, in so far as it involves to the medical mind the presence of the rheumatic diathesis, which is probably not existent, the term is pathologically and scientifically wrong. However, the adjective giving one the impression of some surgical or traumatic condition in connection with the case, and the substantive fairly accurately describing the symptoms of aching pain and stiffness, influenced, as a rule, by atmospheric conditions, surgical or traumatic rheumatism is, in my mind, a term not to be lightly discarded until a better has been substituted.

Etiology.—The causation of the condition is of considerable importance from its bearing upon prophylaxis.

There are cases in which some *constitutional taint* is discoverable as present in a decided degree, and this factor in the etiology is not to be neglected when treatment is exhibited; but, in the great majority of cases, the only assignable cause is some *injury* suffered, it may be, some considerable time previously. This traumatism is sometimes but trifling at the time of infliction, and is forgotten by many patients, so that it must be inquired for very carefully at times.

Trivial as the injury, which often originates the condition, may appear to the patient—so trivial, indeed, as to be speedily forgotten and never connected in his mind with the rheumatoid symptoms from which he eventually suffers—the trouble does not arise from slight injuries only. It follows, also, on many severe injuries, and it has seemed to me that the treatment usually carried out in cases of fractures, dislocations, or severe sprains, is in some sensible measure directly connected with the causation of the disease—the parts being often kept too long at absolute rest, and so a predisposition to overstrain is engendered about the structures around the joint, which develop a low inflammatory condition—indeed, a true chronic periarthritis. Take, for instance, a sprained wrist or Colles' fracture, in which the wrist is put at absolute rest for a period of weeks. The wrist-joint and its surrounding structures undergo a time of unusual quiet, and must suffer a certain degree of atrophy from pressure and disuse. This may be very desirable so far as any traumatic synovitis in the joint itself is concerned, but on the removal of the splints and bandages, the parts are brought so freely into unaccustomed play as to produce a low form of irritation from overstrain, which may necessitate a further period of rest. Thus goes on, indefinitely, free movement and absolute rest alternately, the structures involved being really subjected to what might be termed chronic injury. I have little doubt from what I have seen of these cases that the earlier removal of supports in severe injuries—a practice which, I am glad to say, is now in vogue—will, in some sensible measure, diminish the number of cases of surgical or traumatic rheumatism. There can be no doubt that the ideal treatment of such injuries is to free the parts from all support as soon as the pain has abated, and, while keeping the parts still at rest, so far as active movement is concerned, to practise passive movements along with gradually increasing massage movements for some considerable time before any active movement is permitted.

Occupation, quite apart from traumatism, plays no unimportant part in the causation of this periarthritis in those whose calling necessitates the constant and undue use of special parts. This is seen in the wrists of oarsmen, dressmakers, and pianists, and in the ankles of commercial travellers, domestic servants, and hospital nurses, without any previous acute injury being known; their calling apparently affords the only clue to the chronic injury from overstrain of those parts which have been put to unusual and excessive exertion.

Deformity is another predisposing cause. In flat-foot, it is not uncommon to have a similar condition about the tarsus and its surrounding structures.

The following is the history of a case of surgical rheumatism, taken from my case-book at the Victoria Infirmary, which illustrates well many points in this disease:—

Mrs. R., æt. 40, a dressmaker, was first seen at the Victoria Infirmary Dispensary on 20th September, 1901, complaining of a painful affection of both wrists of considerable duration. Eighteen months before, she had sprained her right wrist by suddenly twisting her hand while turning the handle of a door. This sprain was treated by bandaging for a week, and subsequently with a stimulating embrocation. The acute condition got well in a short time. During the time, however, that the right wrist was out of action, the left was subjected to a somewhat unusual strain. Twelve months before, she began to experience an uncomfortable sensation about the right wrist, the discomfort being localised to the region of the extensor muscles of the thumb. This discomfort increased until the pain was so severe as to render the patient unable to use her right hand properly, and, being compelled by force of circumstances to continue her work, undue strain was again thrown on the left hand and wrist.

Driven by her sufferings to seek medical aid, she underwent a course of internal medication combined with local treatment, which consisted of cold douching and firm bandaging. This treatment was continued for a fortnight, her symptoms becoming aggravated. Medicated liniments were then substituted for the other topical treatment, but still there was no improvement. She continued in a very helpless state for a period of some months, when she consulted a bone-setter, by whom she was treated with forcible passive movement, and with some benefit. It was fortunate that the right wrist began to improve, for very soon a similar painful condition developed in the left wrist, presumably from the prolonged strain to which it was subjected when the right was practically out of action. For this new development in the left wrist, she attended for a period of four months the bone specialist who had benefited her on a previous occasion. Forcible manipulation, which had brought about so marked an amelioration of the condition of the right wrist, proved of no avail in the case of the left.

In June, 1901, she consulted one of the surgeons at the Western Infirmary Dispensary, and was under treatment there for a period of six weeks; for the first four weeks she was advised to rest the arm entirely, while the wrist was firmly bandaged. There was no improvement, so at the end of a month the wrist was enveloped in a plaster of Paris cuff, which was worn for a fortnight, but had to be removed on account of the pain becoming intolerable. After this experience she became very much downcast, was troubled with sleeplessness, and lost flesh considerably—a mental effect, in all probability, as she felt that she was becoming totally incapacitated for the work which formed her only means of livelihood. She consulted the bone-setter again, but he was unable to improve her condition in the slightest degree.

When she came to the Victoria Infirmary in September, 1901, she appeared to be a fairly healthy woman of somewhat spare physique, and seemed exceedingly anxious and hopeless about her condition. The wrists alone were troubling her, especially the left. She had never had rheumatic trouble except in her wrists, which she had been told were rheumatic, Movement in both wrists was perfectly free, and passive manipulation occasioned no suffering; active movement, however, as when prehension was attempted, gave rise to pain. Crepitation was present in both wrists on active movement; it was totally absent during passive exercise of the joints. These are very important items in the diagnosis of the condition, being extra-articular. The appearance of the wrists was normal, except for a slight swelling on the anterior aspect of the right, which was regarded as some hypertrophic muscular condition of the pronator quadratus. There was no objective sensation of heat in either wrist, and no fulness or swelling beyond what has been mentioned. The patient's general condition was good, and the personal and family histories unexceptionable.

At her first visit to the hospital the bandages which swathed the joints were removed, and she was instructed to use her hands as far as possible as if nothing were the matter. A tonic alterative mixture was prescribed, containing salicylate of sodium, iodide of potassium, arsenic, iron, and sarsaparilla. When seen four days later the condition was unimproved, and the patient deeply disappointed. At this, her second visit, the left wrist was cauterised with Corrigan's button, five applications being made. Three days later she called again, and declared that the pain had left the wrist shortly after the application of the cautery, and that it had remained away until the morning of her present visit, when a throbbing sensation was felt in the part. The wrist, which was found to be encircled by a bracelet of blisters, was dressed and lightly bandaged for the purpose of drying up the blisters. At her next visit the blisters had dried up, and the patient declared that she was able to do her work without the slightest discomfort.

This patient was seen frequently for some months afterwards, during which time she had continued to work without intermission, although an occasional return of the rheumatoid pains necessitated a fairly frequent application of the button. The ultimate result I had every reason to consider eminently satisfactory, inasmuch as the patient had been quite unable for sewing work for a considerable period prior to her visiting the Victoria Infirmary.

I have related this cáse *in extenso*, for it illustrates quite a number of points in connection with the subject of traumatic rheumatism:—

1. The causation—the history of a comparatively slight injury, and, later, the history of periods of enforced rest of one or other wrist, alternating with periods of hyperactivity, practically amounting to overstrain of that wrist which happened to be at the the time the less seriously implicated. The occupation of the patient, too, is significant in this connection.

2. The history of the illness is very typical—the drifting of the patient from one medical man to another, thence to the public institutions, thence into the hands of bone-setters and quacks. The non-response of the symptoms to internal medication of varying kinds, and to less heroic measures than the actual cautery, is very typical.

3. The symptoms and signs throw considerable light on the morbid anatomy of the condition. The fact that active movement of the wrist and hand caused considerable suffering, while passive movement was quite free and painless, leads one to exclude the wrist-joint as being the seat of the lesion, and to look upon the periarticular structures as being the actual parts involved.

4. The highly successful, almost immediate, result of the treatment by Corrigan's button.

As regards the *diagnosis* of surgical rheumatism, it differs from ordinary chronic articular rheumatism in there being a distinct history of either an acute traumatism or prolonged overstrain, and in not being benefited by the usual rheumatic remedies. Furthermore, the lesion being usually periarticular, the absence of symptoms of articular involvement should lead one to a true appreciation of the actual state of affairs.

In osteo-arthritis, articular changes are extensive, with signs of erosion of cartilage and growth of bone; the crepitations are coarse and distinct, and are to be elicited on both active and passive movement. In surgical rheumatism, there is little beyond the subjective symptoms, and some crepitations, superficial in character, and elicited only on active movement. In locomotor ataxy, again, the joint changes usually begin with an abundant painless effusion into the joint, and there is subsequently preternatural mobility with the destructive changes; the other symptoms of locomotor ataxy would, however, make the diagnosis certain.

Chronic synovitis of the joint itself, and also the subacute form of the same affection, exhibit symptoms somewhat similar to those of traumatic rheumatism—pain and crepitation—but even here the diagnosis does not, as a rule, present difficulty, for in articular synovitis both active and passive movements elicit pain, while in periarticular rheumatism passive movement is free and practically painless. The two conditions, be it noted, are in many cases present together; but this does not in any way alter the treatment by means of the actual cautery, which has also considerable effect on the articular condition.

Treatment by means of the actual cautery is the only therapeutic exhibition which has yielded any successful result in my own hands. Like venesection, the cautery is a method of treatment which has suffered from neglect which is not at all deserved. Some time ago a highly interesting and instructive paper appeared in one of our leading medical journals advocating a freer use of the red-hot cautery in certain cases, and the author detailed a number of instances in which valuable and brilliant results had been obtained by the use of the red-hot cautery on anæsthetised patients. Anæsthesia is, no doubt, requisite when one is using the iron at a red heat, and burning deeply, as in chronic inflammatory or tubercular disease of the hip-joint; but where one is dealing with a joint which is not thickly covered with muscles or with a periarticular condition, extensive and deep cauterisation is not usually required, and anæsthesia is unnecessary. I have never employed the superficial cautery to the hip, but in the shoulder, which is, though to a less extent, thickly covered with muscular tissue, I have so operated with highly satisfactory results.

One very interesting case I operated on recently under chloroform. A young man, the victim of intractable sciatica, had been sent up to Glasgow from the country to have the benefit of high-frequency treatment. After about half a dozen sittings, the electric specialist informed him that his method could not do him any good, and advised nerve-stretching. He was admitted to one of our city hospitals, but was dismissed, as it was believed that he was suffering from spine disease, to which the sciatica was secondary. I was called in, on his returning home, for the purpose of giving him morphia, under which he had been kept for many weeks, and to which, in my opinion, he was rapidly becoming a slave.

I discovered undoubted evidence of spine disease by the rectum, and advised him to allow me to cauterise his spine. He consented at once, and, after giving him chloroform, I applied the red-hot button to the spine at several points low down. The effect was marvellous; although confined to bed still, on account of the spinal disease, he has not required morphia once since the operation, and he is now lying up at a seaside resort on account of a serious tubercular condition of the lungs, and having the cautery applied to his spine at intervals.

A brother of this patient, also, was affected with lumbago, for which the high-frequency currents were thoroughly tried without effect. His symptoms disappeared after the application of Corrigan's button without anæsthesia.

In using the button in cases of surgical rheumatism, the cautery is heated to a degree only sufficient to destroy the superficial layer of skin, or to blister it, so that anæsthesia is unnecessary. I have operated in this way on a large number of cases, both in hospital and in private practice, with remarkably good results all over. Old dislocations of the shoulder which developed periarticular rheumatism after reduction; old strains of the long head of the biceps (a most annoying affection): old sprains of the knee, wrist, and ankle; pain and stiffness in the hamstring tendons following injury; one case which developed similar symptoms about the tarsus after a twist of the foot, and cases in which the symptoms developed after Colles' and Pott's fractures—are some of the conditions upon which I have operated successfully.

Chronic lumbago resulting from muscular strain yields very readily to the treatment, but one must be cautious in his diagnosis of lumbago—all cases are not suitable for the actual cautery, nor, indeed, for any topical treatment.

Most of the cases which I have enumerated had been treated with anti-rheumatic remedies and by numerous local applications prior to my seeing them, and I know not why it is that the burn of the button should prove so much more efficacious than the blister of the Spanish fly—sufficient for me that

> "Friendship's blind service in the hour of need
> Wipes the pale face and lets the victim bleed;
> Science must stop to reason and explain;
> Art claps her finger on the streaming vein."

CASE OF SEVERE CONCUSSION INJURY TO THE EYE.[1]

By LESLIE BUCHANAN, M.D.,
Surgeon, Glasgow Eye Infirmary.

THE following case, belonging to the class of moderately severe concussion injuries to the eye, illustrates several interesting points.

It occupies a peculiar position in so far as there was a severe blow on the eye, followed by very great defect of sight lasting for several weeks, and still allowing of a very complete recovery.

A young man, D. C., æt. 17, presented himself at the Eye Infirmary, Charlotte Street, complaining that, as a result of a blow with the butt-end of a billiard cue thirty-nine hours previously, he had almost entirely lost the sight of the left eye. He stated that, whilst watching a billiard match, he had bent down to look along the player's cue just as the stroke was being played, and that the cue was drawn quickly back, its butt striking him full on the left eye. There was great pain immediately after the injury, and the eye was so blind that only a "dim glare" could be seen with it. This glare lasted for a minute or two, and, when the eye became became less painful and lachrymation ceased, it was found that light could be distinguished from darkness. The eye was bathed with cold water, which helped to relieve the pain, and the patient went home to bed hoping that the sight would be restored next day. Next morning, however, he found that, though the eye presented little external evidence of the injury, the sight was not markedly improved, and the following day he came to the infirmary for advice.

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[1] Read before a meeting of the Glasgow Medico-Chirurgical Society held on 11th December, 1903.

When seen first there was little external appearance of the injury, no ecchymosis of either lids or conjunctiva. The cornea was clear, and the anterior chamber was normal. The conjunctiva was slightly congested. The pupil was slightly oval horizontally, and was a little irregular in outline. The lens was found to be perfectly transparent, and apparently in its normal position. There was no manifest blood-clot in the vitreous, but that structure was slightly hazy. The optic nerve was congested to a considerable extent, and its outline slightly indistinct. The fovea centralis was invisible, being obscured by a greyish-white cloud which extended from the optic nerve all over the posterior part of the retina. Radiating from the macula as a centre, and dimly visible through the central cloud, were seen a large number of white lines, which extended outwards for about 2·5 discs' breadth. The white lines were about the thickness of an artery at the margin of the disc, were quite straight, began to be visible about a disc's breadth from the macula, and did not obscure the retinal vessels. Refraction − 4 D. Vision = fingers at 2 feet. O.E.R. mixed astigmatism of low degree. Vision (right), $\frac{20}{70}$.

Considering the case to be one of œdema of the retina, with a certain amount of subretinal exudation, and, possibly, myopia due to backward displacement of the lens, atropin locally and a mixture containing sulphate of magnesia were ordered.

A week later it was found that the fundus was much clearer, the greyish opacity of the retina to a large extent gone, so that the fovea could be seen. In the macula area a number of small white spots were seen, like coarse stippling. There was also a hæmorrhage of small size in the retina above the optic nerve, and close to it. Vision of left now equal to $\frac{20}{60}$. Lines still quite clear in the retina.

A fortnight later still, the retina was perfectly clear of clouding, but the white lines were still visible, and the spots in the macula were still present. V = $\frac{2}{5}$.

After another fortnight—namely, five weeks after the injury—the vision was $\frac{1}{2}$, the white lines were gone, but a horizontal row of small white spots was still visible in the macula region, whilst the refraction was now emmetropic. No glass improved vision at this time.

Seven weeks after the injury the vision was $\frac{2}{3}$, and the spots in the macula were still quite visible.

Twelve weeks after the injury the vision was practically normal, and no spots could be seen or any change in the fundus. The pupil was still slightly oval in the horizontal meridian.

Two years after the injury the vision of the eyes was alike, and, aided by suitable glasses, was normal. The left pupil was slightly oval horizontally. There was a spot of pigment, which seemed to be composed of several smaller spots, in the macula. There was no trace of either the retinal hæmorrhage or the white lines. The refractive condition was low mixed astigmatism.

There can be no doubt regarding the main factors in the case. It was traumatic œdema of the retina, and probably the yellowish-white lines radiating from the macula area were the result of puckering of the engorged retina. It is more difficult to say what is the precise nature of the fine white spots in the macula. It is evident that they were exudation of some kind, and probably behind the retina. This would readily account for the presence of pigment in the macula two years later, as the hexagon pigment cells would then be involved to some extent.

The occurrence of myopia due to backward displacement of the lens is a well-recognised feature of such cases. The oval shape of the pupil was not well marked, and was not due to any rupture of iris tissue, but probably to injury to the circular muscle.

It is of special interest to notice that, although the vision was very much reduced at the beginning, practically complete recovery followed, although there was some permanent injury to the macula itself.

In cases of simple œdema of the retina such as Berlin described, recovery is the rule; but, when the injury is so severe that pigment spots remain in the macula, as in Haab's "macular changes," recovery is not, as a rule, so satisfactory as in this case.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW: FINAL M.B. AND CH.B. EXAMINATION.—This year there are 125 candidates. Of these, 109 are men and 16 women. Mr. Bryant and Sir Hugh Beevor, Bart., are attending the examination on behalf of the General Medical Council.

BRITISH MEDICAL ASSOCIATION: GLASGOW AND WEST OF SCOTLAND BRANCH (GLASGOW CENTRAL DIVISION).—The annual meeting of the Central Division of the above Association was held in the Faculty Hall, 242 St. Vincent Street, on 31st May. Professor Stockman presided. The Secretary stated that during the month of April the Division was polled on the question of medical defence, each member receiving a copy of the draft scheme proposed by the Association. Of the 122 members in the Division 33 replied to the circular, and of these, 17 expressed themselves as willing to join a medical defence department if formed in connection with the Association. A memorandum from the Ethical Committee of the Association relating to the advertising of medical practitioners in connection with hydropathic establishments was then considered. While sympathising with every endeavour to prevent advertising in any form, the Division agreed to take no action in the matter. A memorandum from the Medico-Political Committee—"Whether it is advisable that the medical witnesses engaged on each side in legal cases should meet in consultation"—was also considered. After some discussion the meeting agreed that, while no objection could be made to medical witnesses on each side in legal cases meeting in consultation, there were so many difficulties in the way as to make such a scheme impracticable. Communications were read from Dr. P. S. Buchanan on the question of contract medical practice, and from the secretary of the Exeter Division on the "Principles of Medical Policy." The following office-bearers were then elected for the ensuing year:—*President*, Dr. Jas. W. Allan; *Vice-President*, Professor Stockman; *Secretary*, Mr. Jas. Grant Andrew; *Representative to Annual Meeting*, Dr. T. K. Monro; *Representatives on Branch Council*, Professor Stockman and Mr. Jas. Grant Andrew.

PREVENTION OF CONSUMPTION: OPENING OF BELLEFIELD SANATORIUM.—The sanatorium at Bellefield, near Lanark, which has been erected by the Glasgow and District Branch of the National Association for the Prevention of Consumption, was formally opened on 7th June. A large party of ladies and gentlemen travelled from Glasgow by special train to Cleghorn, and thence by brakes to the sanatorium. The perfection of the weather and the season of the year combined to show the institution and its surroundings to the best advantage. After prayer by Rev. Dr. Drummond of Belhaven U.F. Church, some introductory remarks were made by Lord Provost Sir John Ure Primrose, who presided. Mr. Thomas

M'Arly, convener of the Finance Committee, then moved a vote of thanks to the subscribers and to those who had come to the opening ceremony. Mr. Speirs, contractor for the pavilions, presented Lady Primrose with a silver bowl, and her ladyship, having acknowledged the gift, opened a door of the sanatorium, and expressed the hope that it would be the means of bringing much comfort and strength to the sufferers whom it might shelter.

Bellefield Sanatorium is intended for the reception of male patients, and is thus an appropriate complement to the Bridge of Weir institution, where only female patients are admitted.

R.A.M.C. (VOLUNTEERS): GLASGOW COMPANIES' ANNUAL INSPECTION.—The annual inspection of the companies took place in Yorkhill Grounds on 24th June. The inspecting officer, Colonel Hughes, D.S.O.. P.M.O., Scottish District, was accompanied by Lieutenant-Colonel Geddes, D.S.O., R.A.M.C. The parade was under the command of Colonel Beatson, C.B., V.D.; Major Somerville, second in command; and Major Fleming, D.S.O., R.A.M.C., Adjutant, and numbered 640, including 26 officers. Four sergeants and 61 men were "absent with leave." The inspecting officer, having been received with the general salute, thereafter made a most minute and prolonged scrutiny of the ranks. The corps was then formed up in quarter-column and marched down to the saluting base, where it marched past in column and returned in quarter-column. After deploying, the corps advanced in review order, the pipes playing "The British Grenadiers." The different companies then formed up as units and went through a varied programme of duties. The units were as follows:—

	Under command of
Bearer Company,	Major Moyes.
" "	Captain Reid.
No. 1 Field Hospital,	Major M'Gregor-Robertson.
No. 2 "	Lieut. Wright Thomson.
No 3 "	Lieut. Edington.
No. 4 "	Lieut. Charteris.
"E" Coy., Drill and General Duties,	Captain Halliday.
Transport,	Lieut. Mackintosh, M.V.O.

At the conclusion the inspecting officer expressed himself as highly pleased with the soldier-like appearance of the companies, and with the way in which the various evolutions and duties had been carried out. He was specially interested in the cyclist stretcher party. The corps then marched off, and were dismissed at Charing Cross.

NEW PREPARATIONS, &c.

Kepler Malt Extract with Hæmoglobin (London: Burroughs Wellcome & Co.).—The value of a good extract of malt, with its diastase, maltose, phosphates, and albuminoids, is too well known to need mention here. A good deal of attention has been paid in recent years to hæmoglobin as a means of administering iron, not simply in organic combination, but in a form as nearly as possible identical with that in which it exists in the living body. For debilitated subjects who are likely to benefit from the use of both malt and iron, and who may find it difficult to take other preparations of hæmoglobin, the present combination appears to be eminently suitable.

Tabloid Zinc Valerianate with Iron and Arsenic (London: Burroughs Wellcome & Co.).—The sugar coating of this preparation is designed to get rid of the difficulty which arises in the administration of the valerianates in consequence of their peculiar odour and taste. The formula of the present preparation is as follows:—

Zinci valerianatis, ...	gr. ij
Ferri redacti, ...	gr. i
Acidi arseniosi, ...	gr. $\frac{1}{60}$
Extracti gentianæ, ...	gr. i

The sweet coating is of considerable thickness, so that the tabloid, as it passes through the mouth, produces quite an agreeable impression on the sense of taste.

Tabloid Ophthalmic Dionin 0·0005 Gramme (London: Burroughs Wellcome & Co.).—Dionin or ethyl-morphine hydrochloride has been introduced as a substitute for morphia, and appears to resemble codeine pretty closely in its action. With the exception of codeine phosphate, it is the most soluble of the morphine derivatives. In addition to being used internally, it is employed in ophthalmic practice, and for the latter class of work these very soluble tabloids are convenient. They are supplied in tubes containing 25 each.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1903-1904.

MEETING VI.—8TH JANUARY, 1904.

The Vice-President, PROF. R. STOCKMAN, *in the Chair.*

I.—CASE OF SPLENIC ANÆMIA.

BY PROF. T. M'CALL ANDERSON.

R. W., æt. 32, electrician, was admitted to the Western Infirmary on 11th November, 1903.

Family history.—Excellent.

Personal history and history of illness.—Was always very delicate; as a boy suffered much from diarrhœa and rectal prolapse. Never been abroad. When 20 he had a severe attack of diarrhœa, and was an in-patient of the Royal Infirmary, Edinburgh; spleen said to have been enlarged at this time. Since this time he has had frequent attacks of diarrhœa. During the past year he has passed much blood *per rectum,* and on several occasions vomited mouthfuls of blood. For the past eight months he has felt very weak and exhausted; appetite poor. The swelling in his left side now prevents him from stooping without pain.

Present condition.—No emaciation, but marked pallor.

Lungs normal.

Heart.—No increase of area of cardiac dulness; soft systolic apical murmur with first sound; venous hum in neck.

Liver dulness slightly increased.

Spleen markedly enlarged, its lower border extending to the level of the umbilicus in the middle line, and measures 11¼ inches in its greatest length.

Urine normal. No ophthalmoscopic changes. No enlargement of glands.

Blood on admission—

Hæmoglobin, ...	30 per cent.
Red blood corpuscles, ...	3,300,000
White blood corpuscles, ...	2,904

Report on blood examination by Dr. Muir (6th January, 1904)—

Red corpuscles, ...	2,245,000

Poikilocytosis marked.
One or two nucleated reds seen.

Leucocytes, ...	2,650
Lymphocytes, ...	16 per cent.
Large hyalines, ...	17 „
Neutrophiles, ...	65 „
Eosinophiles, ...	2 „

No myelocytes or other abnormal forms present.
Blood plates normal in number.

II.—CASE OF SPLENO-MEDULLARY LEUKÆMIA.

By Prof. T. M'Call Anderson.

J. L., æt. 37, crane-driver, was admitted to the Western Infirmary on 21st November, 1903.

Family history.—Good.

Personal history.—Enjoyed excellent health until onset of present illness. Was never abroad. No history of syphilis.

Present illness.—About twelve years ago he noticed that he was becoming easily fatigued on exertion. Four years ago this weakness became more marked, his appetite failed, and he was frequently troubled with gastric symptoms (pain, vomiting, &c.), and these attacks were usually followed by diarrhœa lasting for a day or two.

In February, 1901, he was suddenly seized with severe pain in the epigastrium, and he now noticed that the belly was swollen. Coincident with this pain profuse diarrhœa and tenesmus set in, twenty or thirty motions a day containing much blood and slime. This condition lasted for about three weeks. He was then admitted to the Western Infirmary (26th February, 1901), and dismissed improved on 2nd August, 1901.

The splenic dulness at this time measured 9½ inches in the middle line; the motions were very watery and contained much blood.

The abdominal swelling continued to increase; he had also moderate diarrhœa (three or four motions daily). Eight months later he had a second attack of severe abdominal pain and profuse diarrhœa, lasting about seven days. During the month prior to admission he suffered from persistent diarrhœa and great bodily weakness.

Present condition.—Marked pallor and emaciation. Abdomen greatly enlarged. Splenic dulness measures 16 inches in its greatest length. Great abdominal tenderness.

Liver slightly enlarged. No enlargement of lymphatic glands noted.

Heart normal.

Lungs.—At bases a few fine râles are heard.

Eyes.—Fundus shows a few small hæmorrhages.

Blood examination on admission—

Hæmoglobin,	30 per cent.
Red blood corpuscles,	3,100,000
White blood corpuscles,	902,800

Report on blood examination by Dr. Muir (27th December, 1903)—

Red corpuscles = 2,315,000. They show considerable variations in size and form, although poikilocytes are, on the whole, not numerous.

Leucocytes = 297,000. Of these, 61 per cent are neutrophiles; and of these, about a third are myelocytes.

Eosinophiles number 13·5 per cent; and of these, about a third are myelocytes.

Basophile cells, with small granules which give the metachromatic reaction with polychrome methylene blue, number 21 per cent. Most of these are small cells with fragmented nuclei.

Other cells number 4·5 per cent, and of these, probably not more than 1 per cent are lymphocytes.

Nucleated reds are fairly abundant.

Blood-plates increased in number.

III.—CASE OF ATRESIA NASI.

By Dr. Walker Downie.

David M., aged 25, was admitted on 13th January, 1904, to Ward XXV of the Western Infirmary, complaining of nasal obstruction.

He had been in the Royal Engineers, and was in Ladysmith during the whole time of the siege in the late war.

On 6th January, 1900, he was struck by a Mauser bullet fired at a distance of only 30 yards. The bullet entered the left cheek, an inch above the angle of the mouth. From this point it crossed the face, and took exit through the right cheek at a slightly higher level, and carrying away a part of the right superior maxilla. In its course from left to right it fractured the hard palate and tore through the nasal septum near the floor. The injury was followed by severe bleeding both from the nose and from the palate, but he was able to walk off the field to camp, a distance of two miles. Three days later several pieces of bone were removed from the mouth. Nothing was done for the nose. After some months patient was dismissed from the army as "medically unfit" on account of the frequent and severe bleeding from the nose.

On admission to the infirmary it was noted that the entrance wound was almost invisible, while the exit wound was marked by a depressed cicatrix. There was also a depressed cicatrix on the roof of the mouth. Nasal respiration was impeded, the right naris being completely closed by a broad adhesion formed between the inferior turbinal, the floor, and the septum. On the left side, the septum and the outer wall were united by a band of scar tissue.

On 14th January patient was put under chloroform, when the fibrous band in the left naris was clipped away, and on the right side the two walls were separated in a similar fashion, and the raw surfaces cauterised.

The nares were packed with cyanide gauze, and five days later the patient was dismissed with the surfaces nearly healed, and with both nares free.

IV.—TOOTH-PLATE LODGED IN THE TRACHEA FOR THREE MONTHS: REMOVED BY OPERATION.

By Dr. Walker Downie.

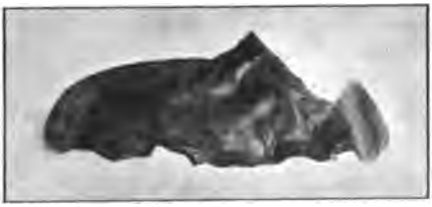
Edward C., aged 33 years, called on me on 27th June, 1902, complaining of difficulty in breathing. His voice was deep-toned and husky, his respirations were 40 per minute and noisy—stridulous in character—and he had all the appearances of a man who was suffering from prolonged and severe dyspnœa. He also had a frequent cough, accompanied by pain in the upper sternal area. He had very little expectoration, and he had practically no pain in swallowing.

The story which he gave was that on 5th April, 1902, he was a spectator at the football match at Ibrox, standing on the second topmost tier of that portion of the stand which on that day gave way. When the stand collapsed, he fell along with about 500 other occupants of the stand, 25 of whom succumbed to the injuries then received, and with the others he was conveyed, in an unconscious state, to the infirmary. On admission he was deeply unconscious, and when examined it was found that, in addition to concussion, he was suffering from a scalp wound, 2½ inches in length, over the right ear, besides other contused wounds of the head, which were treated, and which in due course healed satisfactorily. He remained unconscious for fourteen days. When he regained consciousness he was husky, had a cough, and some roughness in breathing. He was thought to be suffering from "a cold," and for this the house-surgeon prescribed an inhalation, which gave considerable relief.

He left the hospital on 7th May. As he began to move about, he found that he had difficulty in breathing; he became husky, with occasional loss of voice, and had a harsh cough, accompanied by a tough, scanty expectoration; but there was no definite pain and no hæmoptysis. He consulted a doctor, who, considering the condition to be a catarrhal laryngitis, applied blisters over his larynx, and prescribed inhalations, &c., which apparently gave him considerable, though only temporary, relief. Later he went to the coast; but there his discomfort increased, and on his return to town the dyspnœa continued all day long, was increased on exertion, and was so marked at night as to seriously disturb his rest.

On examination at his visit to me, his fauces and pharynx were found to be normal, and the laryngeal mucous membrane was but slightly injected. Well down in the trachea, however, about the level of the third ring, a white object was seen, resembling a piece of necrosed bone, and on telling the patient that there was a foreign body in his windpipe, which might be a piece of dead tissue, or possibly a tooth, he exclaimed that he had never seen his false teeth (artificial denture) since the day of the accident.

After further inspection, I was convinced that the object was an incisor tooth, lying well down in the trachea, with the anterior surface uppermost. I recommended immediate return to hospital, and he was admitted on the same evening, when the parts were examined and photographed by Dr. Mackintosh with the *x*-rays, using a coil having a 20-inch spark. By this means the form of the denture was clearly seen, and next morning (28th June), under chloroform, I opened the trachea. When the cut cartilages were separated with retractors, the denture was found lying with its long axis in the direction of the length of the tube. The tooth was at the level of the lower border of the second ring, and the vulcanite plate to which it was attached was directed from that point downwards. The foreign body was picked out with forceps. The surfaces of the trachea on which the plate rested were ulcerated, and there were pouting granulations here and there. The denture consists of half a plate, an inch and three-quarters long and three-quarters of an inch broad, with one central incisor attached, and two metal pins belonging to a broken off lateral incisor; and this large foreign body had lain in the trachea for the long period of three months to a day. A tracheal canula was introduced, and two days later it was removed, and the wound in the neck closed. He could then breathe deeply and noiselessly, and could speak clearly. He has very kindly come here to-night to show how well his voice has recovered, and how well he is in every way, notwithstanding the long period during which this large foreign body was retained in his trachea.



Portion of a tooth-plate which remained impacted in the trachea for three months.

V.—BOY, AGED 12, WITH HEMIPLEGIA AND APHASIA WHICH FOLLOWED SEVERE GASTRO-ENTERITIS.

By Dr. T. K. Monro.

The patient was a schoolboy, aged 12, who was sent by Dr. M'Callum of Tarbolton. In June, 1903, he suffered from rheumatic symptoms, and after some days these were replaced by severe vomiting and diarrhœa, which continued for a fortnight. Three weeks from the onset of the rheumatic symptoms the patient was seized with right-sided convulsions, which recurred frequently during one or two days, but afterwards became less frequent, and, after a fortnight, finally ceased. Partial right hemiplegia and aphasia remained after the convulsions. During the convulsive period bedsores developed in the sacral region, and bands of cutaneous atrophy appeared on the thighs. In December, 1903, and January, 1904, there was an attack of erythema nodosum.

VI.—SIMPLE WAY OF MAKING A HALF-BOX SPLINT FROM JUNK.

BY DR. ALEX. MACLENNAN.

Dr. Alex. MacLennan demonstrated a method of making a temporary half-box splint from junk (Gooch). The accompanying figures will explain the text. Three pieces of junk are taken—(1) to form a back and side piece; (2) to form a foot piece (slightly broader than the back piece); (3) to form the cross piece and to which both (1) and (2) are to be nailed, as shown in Fig. 1. The largest piece forming (1) and (2) is bent so as to form back and side piece; the back piece is nailed to the cross piece. The foot piece is similarly nailed to the cross piece, so as to allow room for folding up against the back and side piece. The part of the foot piece overlapping the side piece is turned over and nailed to it. The dots in the figures represent the nails, which are best of thin wire. For young children, the splint is strong enough for a permanent one.

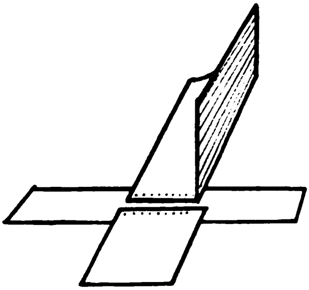


FIG. 1.

Back and side piece nailed to cross piece.

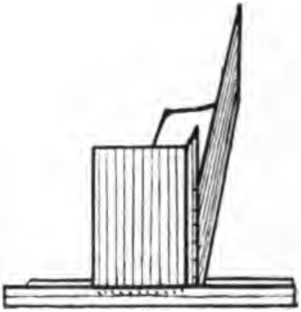


FIG. 2.

Foot piece folded up and nailed to side piece.

VII.—CASE OF WEB-FINGER.

BY DR. ALEX. MACLENNAN.

Dr. Alex. MacLennan showed a case where the third, fourth, and fifth fingers of both hands in an infant were united in one mass; it was not properly a case of web-fingers, for there was no web. Zeller's operation, slightly modified, was performed. Union by first intention had occurred, except in one angle, but the result had been excellent. The steps of the operation were referred to.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1903-1904.

MEETING VI.—14TH MARCH, 1904.

The President, MR. A. E. MAYLARD, *in the Chair.*

I.—FRESH SPECIMEN.

BY DR. A. N. M'GREGOR.

Amputation neuromata.—Amputation had been performed nine years ago. For eight years patient remained perfectly well; then tingling commenced in the stump, and, later, pain. The neuromata were of small size. Microscopic sections were also shown.

II.—NOTES OF A CASE OF PARALYSIS OF THE FACIAL NERVE OF THREE YEARS' DURATION: OPERATION: RECOVERY.

BY DR. J. CRAWFORD RENTON.

A. B., a girl, aged 14, was sent to me by Dr. A. MacLelland, Alexandria, with a history of discharge from the right ear for three and a half years, and of paralysis of the right side of the face for three years.

State on examination.—On admission to the infirmary, she had tenderness over the mastoid region, with an increased pulse-rate and temperature, and she was somewhat drowsy.

Operation and treatment.—The mastoid antrum was opened with the electric burr, and a quantity of pus evacuated. When the acute symptoms subsided, the mastoid and tympanic cavities were converted into one, according to the method recommended by Sir William Macewen and Mr. C. A. Ballance, and an amount of unhealthy tissue removed. The cavity being covered by granulations, at the end of a week skin grafts were applied to effect complete healing and cessation of discharge. The patient was sent to the country with directions to return in a month, with a view to having the facial nerve joined to the spinal accessory in order to correct the paralysis. It was not thought likely that the nerves, having been so long subjected to pressure, would recover by themselves. When she returned in a month, the paralysis had completely disappeared, and she was using the muscles of the right side of her face normally.

Remarks.—The above case illustrates the value of the operation which Sir William Macewen and Mr. Ballance have recommended, and is also interesting as showing how quickly muscles which have been paralysed for three years recover. No electricity was employed to effect this, so that the benefit must be entirely ascribed to the facial nerve being relieved from pressure caused by the chronic inflammation in the tympanum.

III.—KRASKE'S OPERATION.

By Dr. J. Crawford Renton.

Dr. Renton showed a case in which he had removed the middle portion of the rectum for malignant disease by Kraske's operation, preserving the sphincter. The patient, at the end of nine months, was quite well and comfortable, and had suffered no inconvenience from the operation. The parts internally were quite well. The patient is 35, and had suffered for six months previous to operation.

IV.—COMPLETE PENETRATION OF ABDOMINAL CAVITY BY CONICAL BULLET: HÆMORRHAGE FROM INJURY TO MESENTERIC VESSELS: LAPAROTOMY: SECURING OF VESSELS: RECOVERY.

By Mr. A. E. Maylard.

Thomas A., æt. 42, accidentally received a bullet wound from a small Martini-Henry rifle capable of shooting a conical bullet with a diameter of a lead pencil a distance of 40 yards. The patient received the bullet at a distance of 2 yards. He felt the blow, but experienced no pain, became excited, and perspired freely.

Patient was admitted to the Victoria Infirmary on 31st March, 1903, about 8·30 P.M.—*i.e.*, about eleven hours after the accident. He was covered with a cold, clammy sweat, and complained of general muscular pains. There was no distension of the abdomen, rigidity, nor tenderness. The point of entrance of bullet was a little above and to the left of the umbilicus. Before admission to the infirmary, an effort had been made by his medical attendants outside to search for the bullet in the abdominal parietes. Pulse, 120; temperature, 97°; respiration, 48. No flatus had passed for six hours.

Operation (twelve hours after the accident).—The abdomen was opened by a longitudinal incision embracing the supposed aperture of entrance. When the peritoneal cavity was opened, a blood-clot, about 10 oz. in weight, was turned out. The mesentery was found pierced in three places, and there was active hæmorrhage taking place deep down near the spine. This vessel was secured with some difficulty. The bowel in the supposed track of the bullet was carefully examined; but no injury was detected, and the bullet was not found. The patient made an uninterrupted recovery, although the the parietal wound suppurated and left a weakened cicatrix. A skiagraph of the abdomen subsequently taken showed the bullet to be embedded in the lumbar muscles, close to the spine.

The case was discussed, with reference especially to the experiences of such cases in the South African War, by *Mr. H. E. Clark, Dr. J. M. Cowan,* and *Dr. Workman.*

V.—FURTHER REPORT ON THE CASES OF LARGE VENOUS NÆVUS OF THE THIGH AND VARICOSE VEINS OF THE ANTERIOR ABDOMINAL WALL.

By Dr. A. N. M'Gregor.

Venous nœvus.—The members of the Society will remember seeing this patient after the first operation, of ligaturing the veins at the margins of the tumour, had been performed some months. This line of treatment was adopted because the size of the tumour and its position rendered excision impossible and electrical and chemical methods of treatment unsuitable. The amount of shrinkage of the tumour after this first operation was so satisfactory that I proposed ligaturing another set of vessels so as, if possible, to complete the cure. In response to the request of the members of the Society, I now show the result of the second operation. On 21st October, 1903, I ligatured the remaining four veins, the diameter of which was about that of a lead pencil, at points midway between the centre of the tumour and the periphery. The result is now eminently satisfactory. In place of the soft, prominent tumour, there is a hard, irregular mass, insensitive, painless, unaltered by the position of the patient or by exercise, and projecting but little beyond the level of the surrounding skin. The feelings of weight and pulsation do not now trouble the patient, and she is able to use that limb as freely as the other.

Varicose veins of the anterior abdominal wall.—This patient was shown to the Society on 11th January last, when a cross circulation from the left femoral vein by way of the left internal saphenous, left superficial pudic, left superficial epigastric, and corresponding veins of the right side of the abdominal wall, to right femoral vein was demonstrated. This condition had evidently arisen as the result of post-typhoid thrombosis of the left external iliac vein. In the discussion which followed, the opinion was expressed that the amount of blood passing from left to right seemed to indicate that there was still some obstruction in the left iliac vein, and the President indicated that, before any operation were performed, it would be well to test this point. He suggested the wearing of a left inguinal truss experimentally, so as to occlude the superficial pudic and superficial epigastric veins. This was done, and careful measurements taken of the circumference of the limb before and after wearing the truss, when it was found that no appreciable difference resulted. On 30th January, the superficial pudic and superficial epigastric veins on the left side were ligatured, and the dilated portion of internal saphenous vein excised. The patient made a good recovery. As a result of the operation, the dilated veins are markedly less in diameter, though still somewhat prominent. They fill from the right saphenous vein, and when that is occluded, from their smaller tributaries. The ankle still swells, as it did before operation, to the extent of adding an inch to the circumferential measurement. The veins do not now become distended and uncomfortable on exertion.

VI.—SEQUEL TO A CASE CHARACTERISED BY PAROXYSMS OF PAIN, SWELLING, AND HÆMORRHAGE IN VARIOUS SITUATIONS.

By Dr. T. K. Monro and Dr. A. N. M'Gregor.

Drs. Monro and M'Gregor reported that this case continued throughout the greater part of 1903 without any remarkable change, the patient being sometimes better and sometimes worse. He became suddenly ill on 27th December, and died on 3rd January, of acute pulmonary tuberculosis.

[The case is described in detail in the *Lancet* of 16th April, 1904, pp. 1039-1042.]

VII.—REPORT OF SUB-COMMITTEE APPOINTED TO EXAMINE THE RAPIDLY GROWING SARCOMA OF HUMERUS, SHOWN BY DR. RUTHERFURD AT THE FOURTH MEETING OF THE SOCIETY.

The examination of pieces of tumour tissue removed from the periphery of the growth and including periosteum shows the greater part of the tumour to be composed of round cells of medium size, with giant cells in considerable numbers. Small spicules of bone occur throughout the tumour. Here and there the cells of the tumour assume a trabecular arrangement, as if new bone were in process of formation. Taking into account the appearances seen in skiagraphs—the relations seen naked-eye to exist between the tumour and the shaft of the bone, as viewed in longitudinal section, and the uniform character of the round cells which compose the bulk of the tumour—the committee is of opinion that the mass is to be regarded as central in origin, and that it had originated in the upper end of the diaphysis.

VIII.—REPORT ON A TUMOUR OF THE EYE IN A CASE OF MAMMARY CARCINOMA WHICH WAS SHOWN TO THE FOURTH MEETING OF THE SOCIETY BY MR. H. E. CLARK.

By Dr. Charles Workman.

A small portion of the posterior part of the eyeball, with a tumour mass in it, was sent to Dr. Workman for microscopical examination. It was embedded in celloidin, cut, and sections stained by various methods. Dr. Workman found the tumour tissue so greatly degenerated that he could not get a satisfactory colouration of the nuclei of the tumour cells. The inflammatory infiltration which in part surrounds and invades the tumour took the stains fairly well.

The mass of the tumour consisted of a reticulum of connective tissue supporting groups of cells of spindle, round or irregular form, arranged as is seen in cases of alveolar sarcoma. This part was so degenerated that, though he was inclined to consider it sarcomatous, Dr. Workman could not speak with certainty of its nature. In the posterior part of the globe, it appeared to have entirely destroyed the retina and to be in direct continuity with the sclerotic. The lymphatic spaces in the sclerotic were filled with round cells which stained well, unlike the tumour cells, and were probably of inflammatory origin.

The tumour, in Dr. Workman's opinion, does not at all resemble a scirrhus of the mamma in structure.

Dr. A. R. Ferguson was inclined to agree with Dr. Workman, but was unable to form a definite opinion, owing to the degenerated state of the tissue.

Mr. H. E. Clark expressed himself as still of the opinion that, in view of all the circumstances of the case and the uncertain result of the histological examination, the tumour was a real metastatic growth in the eye, secondary to mammary carcinoma.

Professor Muir, while likewise unable to form a definite diagnosis, rather favoured the view of Mr. Clark. The structure of a secondary carcinoma might be rather atypical, and the stroma especially might be deficient in such a situation as the interior of the eyeball.

IX.—CARD SPECIMENS.

By Dr. J. Crawford Renton.—Cysts of the thyroid body (two specimens). Periosteal sarcoma.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Session 1903-1904.

Meeting V.—24th February, 1904.

The President, Dr. J. Nigel Stark, *in the Chair.*

I.—SPECIMENS.

By Dr. J. K. Kelly.

1. Multiple fibroids of uterus removed by supravaginal hysterectomy.
2. Hydrosalpinx.

II.—DISCUSSION ON THE DIFFICULTIES ATTENDING THE DIAGNOSIS OF ABDOMINAL FROM PELVIC LESIONS.

Mr. R. H. Parry—When asked by the secretary to contribute to this winter's programme I suggested that I might be allowed to introduce a discussion on the diagnosis of abdominal conditions simulating pelvic disorders. On more careful consideration of the subject, however, I came to the conclusion that I should content myself with pointing out the difficulties attending the diagnosis of abdominal from pelvic lesions.

To attempt a differential diagnosis or to lay down a line of treatment for each disease would, I fear, occupy us during many evenings.

When there is some doubt as to the nature of an abdominal affection, a surgeon is very often appealed to, and in this way I have enjoyed many opportunities of dealing with affections which, although abdominal in their origin, yet through their complications simulated pelvic disorders.

On anatomical considerations the difficulties attending an exact diagnosis would appear to be inevitable, owing to the proximity of organs which are frequently the seat of acute and chronic diseases—to the pelvic organs—and further, to the tendency of purulent exudation, or to extravasation from the bowel or the abdominal organs, to travel into the most dependent part of the pelvis.

The abdominal conditions to which I would particularly draw your attention to-night may, for convenience of description, be arranged into two groups—viz., acute and chronic.

In the first group are included acute appendicitis, perforation of stomach, hæmorrhage into stomach or bowel, and perforation of bowel.

Acute appendicitis.—Of the various positions of the appendix, the one which is of special interest to us here is that in which it lies *near the brim of*, or *in*, the pelvis. In this situation it is brought into close contact with the Fallopian tube and ovary, and this, in addition to its anatomical connection, by means of the appendicular ovarian ligament.

The symptoms attending acute inflammation of the appendix in this situation may closely resemble those of salpingitis. In both affections the pelvic peritoneum may be involved, leading to interference with the function of the bladder and to the formation of a varying amount of exudation into the pouch of Douglas.

A by no means unusual complication of appendicitis in young women is that in which an abscess forms in the pouch of Douglas with no indications at M'Burney's point that the appendix was affected. The absence of tenderness in the usual situation of the appendix has sometimes led to the exclusion of that organ as the offending member.

Even after the abdomen is opened it is not always possible to determine whether we have to deal with a suppurating appendix or an inflamed Fallopian tube. Adhesions are numerous in the middle line, while in the right iliac fossa they may be few or altogether absent; so that exploration in that direction would probably lead to opening up of the general peritoneal cavity, and to the danger, if pus were found in the pouch of Douglas, of diffuse purulent peritonitis.

A case came under my notice recently of a young woman, who shortly after marriage developed acute peritonitis with the formation, within a few days of the onset of illness, of a large swelling in Douglas's pouch. A month later a median incision was made above the pubes, and after some adhesions were divided a large abscess was evacuated from the pouch of Douglas. She improved rapidly, the wound healed, and she was discharged from hospital cured. The opinion formed was that the case had been one of appendicitis. Some three months later she was sent to me owing to the persistence of pelvic pain, due, it was naturally supposed, to adhesions. At the second operation I found the appendix absolutely normal, while the right Fallopian tube was greatly distended and contained offensive pus. I was greatly interested in the discovery of this to find that the temperature had remained normal, and before finally closing the abdomen a careful examination of the pelvic floor was made in the line of the rectum, when a small aperture was found through which, no doubt, the pus from the Fallopian tube found an exit into the bowel.

The sudden onset of acute abdominal pain in young women, with evidence within a few hours of peritonitis, is always a matter of great concern to those who have the responsibility of the treatment.

A gangrenous or perforated appendix lying free in the abdominal cavity will call for prompt surgical treatment, as no adhesions subsequent to the rupture will avail in preventing infection of the peritoneum. On the other hand, peritonitis supervening on a salpingitis runs, I believe, a milder course, and the question of operation is not so urgent. On this point I should like to hear the opinion of the Fellows. I may here give a brief account of a case which was under my care a month or two ago.

A young lady had complained for a few days of abdominal pain, examination into the cause of which revealed some tenderness in the right iliac fossa. The case, even as an appendicitis, was a very mild one. Suddenly, one evening she was seized with severe pain, followed by collapse, and a hypodermic injection of morphia only gave partial relief.

Her medical attendant, Dr. Munro Campbell, suspecting perforation, communicated at once with me with a view to securing my services for operation. On opening the abdomen in the middle line, some turbid serum escaped, and during exploration of the pelvis a large quantity came away, together with two fæcal concretions which had found their way through the perforation in the appendix. Delay in this case would have involved very serious consequences. In peritonitis following salpingitis, however, early operation would, I fear, lead to the sacrifice of the tubes. I shall not pursue this subject any further, but shall leave you to add your own experience.

Perforation of stomach.—This occurs, as is well known, more frequently in females. It is said to be preceded by symptoms of dyspepsia or ulceration, but I have come across several cases in which no information could be gained on these points. Indeed, the onset of pain was sudden and severe, and, up to the moment of seizure, at least three of the patients were in good health. When seen within an hour or two after rupture had taken place the local indications were not limited to the epigastric region; and in one of the cases the only complaint of pain was made on pressure being applied over the sigmoid.

In another (patient, 14 years of age), the whole of the abdomen was tender, while in a third the pallor and the general relaxation of the abdomen suggested hæmorrhage from a ruptured tubal pregnancy.

In these three cases, as indeed in others, the question occurred to me, as well as to the medical attendants—had we to deal with a perforation of an inflamed or gangrenous appendix, perforation of stomach, or a ruptured tubal pregnancy.

The evidence at operation was, in some cases, fairly clear that a leakage from the stomach had probably occurred some days previously, but that what escaped was confined by adhesions to the immediate area of the perforation, and that the onset of acute symptoms coincided with rupture of a limited abscess, formed within the adhesions, into the peritoneal cavity.

In cases where no operation was performed, a plastic peritonitis was followed by extensive adhesions and subsidence of the abdominal symptoms; but a *post-mortem* examination revealed an abscess in the pouch of Douglas.

Hæmorrhage into stomach or duodenum.—Rupture of an ectopic pregnancy may occur in a patient the subject of chronic gastric disorder. The pallor which usually follows the rupture may, in such a case, lead to a diagnosis of hæmorrhage into stomach or duodenum.

Pelvic examination may reveal very little, and the menstrual history may not be obtainable.

A case bearing on these difficulties occurred in the practice of a medical man in Glasgow last year, which, although diagnosed as probably hæmorrhage into the stomach, turned out to be one of ruptured ectopic pregnancy.

The presence of blood in the vomit usually indicates the seat of the bleeding; but if vomiting does not occur, then it will probably be inferred that it proceeds from the Fallopian tube. Even in severe cases of hæmorrhage from the stomach, recovery is the rule, without operative interference. But in the case of hæmorrhage into the peritoneum from rupture of a tubal pregnancy prompt surgical measures are demanded. In this case the pelvic condition is the urgent one from the point of view of operative treatment; while in appendicitis of the types mentioned the abdominal is the urgent one.

Perforation of bowel.—A case was mentioned to me recently of a patient, who a few days after a normal confinement, developed severe abdominal symptoms. She was removed to hospital for operation, some thickening having been made out in one of the lateral fornices. At the *post-mortem* examination a perforation of the ileum was discovered.

We have now to consider the conditions embraced in the second group. Among these are movable kidney and colitis, chronic appendicitis, retroperitoneal tumours, omental tumours and carcinoma of rectum, tumours of small bowel and mesenteric glands, renal tumours, cysts of pancreas.

Movable kidney or floating kidney is frequently met with in association with colitis and with uterine disorders. The symptoms are referred, in many instances, to the right or left iliac fossa, or to both. The gynæcologist connects the pain in this situation with disturbance of function, or alteration of structure or relations of the pelvic generative organs, and treats it either on palliative or radical lines.

The surgeon, on the other hand, ascribing the pain to displacement of the kidney, fixes that organ, while the physician, viewing the cause from a wider standpoint, feels entitled to condemn the diagnosis and practice of both.

Speaking from personal experience of a large number of cases, I must admit to a feeling of disappointment in the result of nephrorraphy in this particular type.

If the operation is undertaken, it is only after the state of the pelvic organs and of the colon has been determined, and it has been explained to the patient or friends that only a measure of relief need be looked for.

Within the past two years I have come across several patients who had submitted to ovariotomy for the relief of pain in the lower part of abdomen; in others the vermiform appendix was removed later; and in one the kidney was stitched in addition to the operations on ovary and appendix, with, I must add, very indifferent results.

The opinion I have formed is, that the pain is due in a large measure to colitis, and that when this quiets down, the renal or pelvic discomfort is greatly modified.

Acting on this, I have directed my attention more particularly to the colon, and the history of a case under observation just now may be of interest.

The patient, who is of a decidedly neurotic tendency, entered one of the Glasgow hospitals as a nurse; and while there, she was treated by the gynæcologist of the institution, but obtaining no relief had for a time to give up nursing. She was advised to enter the Victoria Infirmary to have her kidney stitched, and I was asked to see her with a view to carrying that out.

I suggested that she should rest for a time, and undergo general treatment, such as massage, &c., previous to the operation. This, however, was not carried out, and the patient went home. She returned in the course of six or eight weeks, and requested me to stitch her kidney, which I did, on the understanding that it would only give her partial relief. This turned out to be the case. The bowels remained obstinately constipated, and at times a quantity of mucus was discharged with the stools.

With a view to flushing the bowel and to the introduction of drugs into it, the appendix was brought out, opened, and stitched to the skin; and through it a "No. 10" rubber catheter was introduced into the cæcum.

By this means the bowel was very thoroughly washed out every morning, hard scybalous masses being thus dislodged.

At night a mixture of bismuth and ichthyol was given by same route.

The progress, so far, has been most satisfactory, and I hope in the course of a few weeks to give a full account of the case.

Chronic appendicitis.—It has already been pointed out that the vermiform appendix and ovary are connected by means of the appendicular ovarian ligament, in which a branch of the ovarian artery reaches the appendix. Matting of appendix, ovary, and Fallopian tubes frequently occurs, and I fear that it would be impossible to make a positive diagnosis as to the seat of the primary lesion until the parts were carefully examined after operation. The swelling at the brim of the pelvis should, however, raise in the mind of the operator the involvement of appendix or ovary, or both. The abdominal incision should accordingly be made, so that either of these structures might be dealt with. I usually incise in the middle line.

Retro-peritoneal lipoma.—These form very large tumours, and usually start in the retro-peritoneal tissue in the neighbourhood of the kidney.

They are painless, and it is not until they become large that they make themselves felt.

They are soft and movable, and present many of the characteristics of an ovarian tumour, for which they are often mistaken.

I had the opportunity three years ago of showing a tumour, weighing 10 lb., removed from a lady who, while in the enjoyment of excellent health, discovered that she was getting somewhat stout.

As a large tumour was made out extending from the costal margin down to the brim of the pelvis, the question of its relation to the ovary was seriously entertained.

A consultation was held, at which Drs. Kelly and Reid were present, with a view to settling this point, but while its ovarian origin was dismissed, no opinion was expressed as to its origin; but the patient was advised to submit to operation, which she did, and the mass was removed. She remained perfectly well for three years, but five weeks ago she was operated on for recurrence. The most recent view of these retro-peritoneal tumours in abdomen is that they are mixed tumours, containing fat and myxosarcomatous tissue.

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In the treatment of these it is essential that the whole of the capsule should be removed.

It is in the interest both of the patient and of the surgeon that the nature of the tumour should, if possible, be made out before the operation, which is of a most formidable nature.

As this is so often mistaken for ovarian tumour, I thought it right to bring it under your notice.

In the absence of ascitis or distension of bowel, retro-peritoneal tumours in pelvis are fairly easily made out by manual examination.

Omental tumours.—When composed of fat they occasion difficulty in diagnosis from ovarian cysts owing to their situation and mobility.

They differ from retro-peritoneal growths in that they are simple and do not recur.

Renal tumours.—A hydronephrotic kidney with a long pedicle may travel towards the pelvis, and may be easily mistaken for an ovarian tumour. On one occasion the reverse was found to be the case, and the patient was told that a nephrorraphy would put matters right; the loss of her ovary, however, made her extremely unhappy.

On one occasion I nearly removed the only kidney for an ovarian cyst. The patient, a girl of 16 (on a visit to Irvine), was seized with abdominal pain, and on her medical attendant examining her he found abdomen enormously distended.

As she had not passed urine for twelve hours he introduced a catheter, but found the bladder empty. I saw her the next day, and agreed that we would probably have to deal with a tumour.

She was removed to Glasgow, and the abdomen was opened, when a large cystic tumour was found. During the withdrawal of the fluid the patient became extremely collapsed, and the operation was hurriedly finished, the edges of the opening into the cyst being attached to the skin.

About a gallon of fluid escaped during the operation, and had the patient not collapsed I believe I should have proceeded to turn out the cyst and probably to remove it.

The cyst turned out to be the only kidney. She died a year later.

Cyst of pancreas.—In six cases observed by me the tumour was near the splenic end of the pancreas, and so was difficult to differentiate from tumours of the kidney. In one, however, a very large cyst occupied nearly the whole of abdomen, and its true character was revealed at the operation.

Tumours of small bowel or of mesenteric glands.—These include tuberculous disease, lympho-sarcoma, and carcinoma. They not infrequently contract adhesions to the pelvic organs, and hence errors arise in distinguishing them from those of pelvic origin.

Last year, at an operation, a large mass with attachments to uterus and bladder was removed along with 18 inches of the small bowel, and several enormously enlarged mesenteric glands, which were the seat of lympho-sarcoma. This patient made a good recovery, but I believe the glands in the groin are now suspiciously enlarged.

Carcinoma of rectum.—There is a form of carcinoma of rectum, which is comparatively rare, and, when met with in females the subject of chronic uterine or tubal disease, may be mistaken for inflammatory thickening of the bowel.

The usual symptoms—constipation, tenesmus, mucous or bloody discharge—are absent.

On digital examination of the rectum an indefinite thickening may be made out, commencing at a point 2 or 3 inches above the anus, over which the mucous membrane appears to be intact.

In the cases which I have had the opportunity of examining, the whole mesenteric attachment of the bowel was the seat of carcinomatous deposits; but, for reasons which I cannot explain, the larger ones were in the rectum. The most prominent symptom is *pain*, and later, distension due to accumulation of fluid in the peritoneum.

I have not, as will be gathered, attempted anything more than to give a very brief sketch of some of the conditions I have been called upon to treat, which, at the onset of illness, and through the development of complications later, gave rise to some difficulty in both diagnosis and treatment.

To most of the Fellows these conditions are well known, but it is possible that some of the points I have touched upon may be new, and therefore of interest.

There should be no hard and fast line between the practice of the surgeon and that of the gynecologist, and we should, I believe, be prepared to carry out any operation on any of the abdominal organs if we undertake to open the abdomen.

I have heard of a gynæcologist, who, on discovering that the appendix was diseased, closed the abdomen and handed the case over to a surgeon.

In respect of those cases in which much difference of opinion exists between surgeon and gynecologist, there is much to be said in favour of comparing notes occasionally.

Dr. J. K. Kelly congratulated Mr. Parry on the interesting series of cases he had brought before the Society. He said it was difficult at times to distinguish between appendicitis and salpingitis, and referred to a patient at present in his ward in the Royal Infirmary who had had severe pelvic pain since a miscarriage in July, 1903, with occasional rise of temperature and septic symptoms. The uterus had been curetted in October, but the pain had continued, and the patient was exhausted by the suffering. On examination, no tumour of either tube or appendix could be discovered, and the question of the source of the pain was left undecided. At the abdominal section the appendix was found perfectly normal, and the only evidence of the disease were a few flakes of fibrinous deposit over the slightly congested extremity of the right tube. The tube and ovary were removed, and, so far, the patient had been completely freed from the pain. In another case a large abscess in the pouch of Douglas was found, which had arisen from no definite lesion, in a sterile woman, the only complaint from which the patient had suffered having been occasional attacks of intestinal colic. As the generative organs seemed healthy, it was probable that this was a case of appendicitis in which the abscess had formed in the pelvis. Mr. Parry had referred to the frequency with which immediate operation was called for in perforation of the stomach and even in appendicitis, and had contrasted this with salpingitis, but in salpingitis, also, immediate operation was sometimes demanded, and a case of this kind was referred to. In reference to difficulties in diagnosis, Dr. Kelly instanced a case in which an omental cancer had caused an encysted peritoneal collection of fluid and was diagnosed as an ovarian cyst, and another in which a flaccid cyst, filling the whole abdomen and diagnosed as a parovarian cyst, was found to be a cyst (hydronephrosis ?) of the right kidney.

Dr. Samuel Sloan expressed the pleasure and profit with which he had listened to Mr. Parry's paper. He was surprised to hear that small, incomplete ruptures of the stomach were unrecognised ; and he related a case of this nature which he had seen, rupture into the cavity of the peritoneum taking place later on. The treatment carried out by Mr. Parry for membranous colitis was evidently based on the assumption that that disease was simply a constipation. This was interesting in view of the fact that an eminent surgeon had at a meeting of this Society, sometime ago, advocated removal of the ovaries for this affection. Regarding the difficulty in the diagnosis of cancer of the rectum, he detailed two cases, in one of which two eminent gynæcologists had failed to diagnose the case correctly, though the lady died a few weeks later from extension of the disease to the peritoneum. In the other case, the diagnosis was still uncertain, but as the tumour was first detected two years ago, and had not advanced since, whilst the patient was not losing flesh, he was hoping that it would turn out to be a retro-peritoneal tumour of the kind described by Mr. Parry. In this case there was cause for grave suspicion in the presence, since June, 1901, of dark blood and mucus in the stools. He asked Mr. Parry if, in his opinion, pressure alone might account for the blood and mucus.

Dr. Balfour Marshall said that Mr. Parry's paper opened up a wide field for useful discussion, as all abdominal operators found difficulties and made mistakes in diagnosis. In one case of ruptured ovarian abscess he had diagnosed a ruptured gastric ulcer. The patient, a young woman, suffering from gastric ulcer, was seized with sudden pain in the abdomen, referred to right upper quadrant, and followed by a rapid rise of temperature to 104° with collapse. Operation revealed a ruptured right ovarian abscess, although the patient had not previously complained of pelvic symptoms. A few days after operation she had an alarming hæmorrhage from the stomach, followed a few days later by another which nearly proved fatal.

He considered that too much importance was placed on movable or displaced kidney, and he had not infrequently found that in women they gave rise to no symptoms at all. Two weeks ago he had seen a patient where, in the course of making a pelvic examination, the right kidney was found at the pelvic brim and causing no discomfort He had also recently seen a case where a displaced kidney had been diagnosed and operation advised. The symptoms were due to an old pelvic cellulitis, while repeated examinations showed the kidney was in normal position. He was specially interested in Mr. Parry's case of lymphosarcoma of the mesentery, as he had previously seen it, and expressed the opinion that the patient had a double ovarian tumour. He had brought a short note of the condition taken from his case-book.

Mrs. S., six years married, three children, last born in July, 1902. Patient seen at the Royal Infirmary, 5th March, 1903. Menses regular till November, then ammorrhœa till 3rd January, 1903. Between this date and 14th February she had seven attacks of metrorrhagia, lasting two or three days at a time. She complained of dull hypogastric pain. Examination showed the uterus retroverted into the hollow of the sacrum (second degree). A cystic tumour lay below the level of the fundus uteri in the left side of the pelvis. Above and to the right of the uterus was a hard, tense, rounded tumour, almost like a fibroid in consistency. From the position and relation to uterus they were regarded as ovarian tumours.

He had mistaken a case of malignancy of the omentum for an adherent ovarian cystoma in a woman of 40. The mass closely simulated in feel and consistency a multilocular cystoma. It occupied the left side of the abdomen, extended down to the pelvis, and what proved to be a broad band of adhesions to the left annexa was taken for the pedicle. The patient remained well for many months after operation, and died two years later from heart disease.

He had seen a case diagnosed as salpingitis owing to vague abdominal symptoms. The history, however, pointed to a tapeworm which came away after a dose of felix mas.

Dr. Alex. MacLennan referred to two cases where the difficulty in diagnosis had been very great. Both cases occurred in the practice of Professor M. Cameron. In one there was a tumour which closely simulated a myoma of the uterus, but on operation the condition found was a very advanced implication of the sigmoid flexure by a malignant adenoma. The other case simulated either a floating kidney or an ovarian tumour with a long pedicle. On opening the abdomen the tumour was found to be a carcinoma of the sigmoid.

Mr. Parry replied.

GLASGOW EASTERN MEDICAL SOCIETY.

Session 1903-1904.

Meeting IX.—3rd February, 1904.

The President, Dr. Charles R. M'Lean, *in the Chair.*

DEMONSTRATION OF MEDICAL CASES.

By Dr. T. K. Monro.

Dr. Monro demonstrated the following cases from his wards:—

1. A girl, aged 15, with mitral valvular disease.
2. A man with mitral obstruction and regurgitation.
3. A man with aortic obstruction and regurgitation, and with a pulsating aneurysm at the first and second intercostal spaces on the left side.
4. A man with an aortic aneurysm giving rise to pressure symptoms (paralysis of left vocal cord, &c.).
5. A case of gastroptosis in a woman. The displacement was well seen after artificial distension of the stomach by carbon dioxide.
6. A boy, 12 years of age, with the typical phenomena of chronic interstitial nephritis.

The patient was to have been shown at the last meeting of the Society, but as he had been taking convulsions at that time, he could not be taken out of hospital.

The typical features were pointed out—(1) albuminuria; (2) increased blood tension; (3) cardiac hypertrophy; (4) thickening of the walls of the arteries; (5) changes in the retina (optic neuritis and changes in the region of the macula, characterised by white radiating streaks).

7. A man with right hemiplegia and aphasia.

8 and 9. Two cases of diabetes mellitus—both men.

One case, a man of 30, had improved greatly since admission, and the urine was now free from sugar. He was taking Von Noorden's diet. The other patient was not improving, and his urine yielded reactions both for diacetic acid and for acetone. In considering the diet for diabetes, Dr. Monro showed that every maker's bread was not starch-free, and he demonstrated a simple means of testing for starch.

10. A patient with hemiplegia and loss of speech, following gastro-enteritis.

11. A woman with aphasia.

12. A man, æt. 27, with intracranial tumour, probably in one side of the cerebellum. The symptoms included optic neuritis, headache, vomiting, drooping of the right shoulder, tendency to reel to that side, and greater exaggeration of the knee-jerk on that side.

13. A man with locomotor ataxia.

14. Another case of locomotor ataxia in a male.

15 and 16. Two cases of eczema—one with optic atrophy.

17. A seaman with a mild type of the mixed variety of beri-beri.

In this patient the knee-jerks were absent, there was impairment of sensation over the front of the tibia and tenderness of the calf muscles, indicative of neuritis.

In discussing the etiology, Dr. Monro referred to the atrophic or paralytic and wet or dropsical varieties.

At the close of the demonstration the *President* proposed a vote of thanks to Dr. Monro for his interesting demonstration, and to Dr. Thom, the Medical Superintendent of the Infirmary, for the arrangements for the meeting.

GLASGOW NORTHERN MEDICAL SOCIETY.

THE fifth ordinary meeting of the session was held in the Maternity Hospital on 1st March.

DR. MUNRO KERR read a paper introducing a discussion on the diagnosis and treatment of contracted pelvis.

Dr. Kerr, having welcomed the Society to the Maternity Hospital, spoke first of abnormalities of the bony pelvis, which are very common in Glasgow—1 in 7 of those admitted to the hospital during the last year having a deformed pelvis. This number, however, is probably above the average, a larger proportion than normal being seen generally in hospital.

In treating cases of contracted pelvis, it is not sufficient to act in an empirical manner, and apply the forceps blindly—one must determine the degree of deformity.

While many forms of deformity are described, practically all the cases met with are those of flat, non-rachitic, generally contracted or rachitic pelvis, and it is sufficient to consider their treatment.

The diagnosis of contracted pelvis is seldom difficult, and is easier when the deformity is great. Where the malformation is slight, it may be overlooked, and yet no harm be done. It is of great importance to estimate the degree and nature of the deformity, and this is a difficult matter owing to the difficulty in measuring pelves. An exact measurement is of less importance where the degree of contraction is very slight or very great, as, in the former, forceps are applied, and, in the latter, Cæsarean section is performed. It is in cases of medium deformity that accurate measurement is so essential. Amongst the more accurate pelvimeters may be mentioned those of Skutche and Faulk.

Another point of equal importance is the size and consistence of the child's head, and there are many difficulties in arriving at this. It has been said that the fœtal head is the best pelvimeter, and one mode of determining suitable treatment is to determine the relation of the head to the pelvis. This may be done by combining, practically, the methods of Müller and Pinard. With the right hand one takes the Pawlic grip of the head, and presses the head into the pelvis, while, with two fingers of the left introduced into the vagina, one feels how the head engages, and, at the same time, with the thumb, one feels all along the brim, and estimates the degree of overlapping. By this method the chances of the head passing the brim, the degree of traction required, and the consistence of the head, can be accurately estimated. Objections which may be raised to the method are that an anæsthetic is necessary, and that the presentation may be breech. As a matter of fact, an anæsthetic is not always necessary, and a breech presentation may be converted, before the thirty-sixth week, by external version.

In conclusion, regarding diagnosis, pelvis should be carefully measured by hand and by pelvimeter; size of child's head should be estimated by palpation and calipers, or an attempt made to do so; relative size of head to pelvis should be estimated, and treatment based on this; where difference in size of head and pelvis is slight, decision should only be arrived at after watching progress of labour, this being especially important in primipara; and, where the disparity between size of head and pelvis is slight, delivery may be attempted in the Walcher position.

Regarding treatment, it is difficult to fix a degree of deformity below which spontaneous birth is impossible. Thus, in two cases, a rachitic dwarf delivered herself without assistance, the child weighing 7½ lb. on one occasion, her C.V. being 3½ inches.

The presentation, consistence of the head, and the position of the occiput with reference to the roomy side of the pelvis, all have a bearing on the question.

As regards the use of forceps, those of the Simpson or Milne Murray type are best. Walcher's position is an advantage.

Prospect of success is very slight where there is an appreciable overlapping of the head at the symphysis. As to delivering an uninjured child, an anterior parietal presentation is the most favourable, and the lowest limit for forceps should be a vera of 3½ inches, and then only if head be not too large for the pelvis.

As regards version, it is more dangerous to the mother, and the fœtal mortality is much higher.

Symphysiotomy may be employed in carefully chosen cases. The overlapping of the head at the symphysis must be very slight, and the operation should not be attempted with a vera below 2¾ inches.

As regards the induction of premature labour, the treatment would be ideal if one saw cases at a sufficiently early stage, and one could tell exactly how far pregnancy had advanced.

Where one is sure of the age, it is undesirable to induce before the thirty-fourth week. Where one does not know the age, labour should be induced when the head will only enter the pelvis with difficulty.

Craniotomy should be performed where child has a weak heart, and is not likely to survive, and cannot be delivered with forceps.

Several interesting cases, including Cæsarean sections, symphysiotomy, &c., having been shown, Dr. Munro Kerr's method of examining relative sizes of pelvis and fœtal head was demonstrated on an actual case.

Numerous instruments, including Milne Murray's and Frommer's forceps, and Bossi's dilators were shown, and their advantages explained.

Dr. Ritchie remarked on the advantages of having the patient on a table in cases of instrumental delivery.

Dr. Todd said he was glad to find that there was an inclination to return to the use of forceps in a proportion of cases, version not being performed so often. He referred to difference in conditions at different labours in the same patient, and, agreed that the important point was the relation in size, &c., of the fœtal head to the pelvis.

Dr. Marshall emphasised the advantage of antero-parietal presentations over postero-parietal.

Dr. Jardine said it was possible to know whether the head would pass the pelvis. The hardness of the head, overlaping at the symphysis, and the presentation, were all important points. Risk was increased by prolapse of the cord. He emphasised the importance of acertaining size of pelvis, and said he considered the thirty-fourth or thirty-fifth week the best time to induce labour—never before the thirty-second. He did not like symphysiotomy on account of complications.

The *President* referred to some cases met with in practice, and expressed the indebtedness of the Society to Dr. Munro Kerr.

REVIEWS.

Therapeutics of Infancy and Childhood. By A. JACOBI, M.D., LL.D. Third Edition. Philadelphia and London: J. B. Lippincott Company. 1903.

THE fact that this publication has reached its third edition in the course of seven years bears testimony not only to the intrinsic merits of the work, but it also shows that the author's method of presenting his subject is acceptable to the medical public. And this is a matter of no little interest, for Dr. Jacobi's treatment of the *Therapeutics of Infancy and Childhood* is distinctly off the usual lines. The book is not a "text-book" on the diseases of children, nor yet can it be classed as an "index of treatment." The symptoms of disease come in for but little consideration, and treatment is rather founded on a study of etiology and pathological anatomy. We are told in the preface that "the profession seems to have approved of my attempt at founding therapeutics on etiology. Their connection I have tried to make still closer, and the reader will find that in a concise manner much that belongs to pathological anatomy, etiology, and diagnosis is utilised in the interest of treatment. In this way the book, I think, is a comprehensive treatise on 'theory and practice,' the former being the foundation of the latter." This is all very true, but is it not the symptoms that indicate the pathological change, and should they not therefore also be carefully considered in view of a rational treatment? The book is essentially scientific in its method of thought, and it contains so much useful knowledge that we feel a regret that this has not all been somewhat amplified, and the volume made in reality a treatise on the theory and practice of diseases of children.

In this third edition, there have been many additions made to the book so as to bring it up to date, but there have been no real change in its general characters. One would have gladly welcomed some alteration in the author's style of expression, which in places seems to us quite unnecessarily prolix. The following will explain what we mean (p. 50):—"Therapeutics of infants and children has had its stages between the era of dull and ignorant prescribing and that of impotent and conceited nihilism and of churlish pessimism. But neither a deluge nor an absence of drugs makes a physician, nor do they contribute, when alone, to the welfare of a single individual of the community." There is too much of this sort of thing, which in time ceases to amuse and becomes tiresome. In concluding, we give one other extract, which further illustrates the author's way of putting things. It is on page 66:—"The *rectum* of the infant and child has been rising, in the estimation of the practitioner, since the times of thermometry; for it is certainly the safest and easiest place to take the temperature."

Dispensing Made Easy: with Numerous Formulæ, and Practical Hints to secure Simplicity, Rapidity, and Economy. By WM. G. SUTHERLAND, M.B. Bristol: John Wright & Co. 1904.

To the question, How can dispensing best be accomplished, so as to lighten what is an irksome and tedious branch of the general practitioner's duties, and at the same time secure simplicity, accuracy, and last, but not least, economy without sacrificing in the least therapeutical efficiency? this book contains the answer. It simply teems with time- and money-saving suggestions, and we strongly advise every medical practitioner who dispenses his own medicines to at once procure a copy.

Transactions of the Association of American Physicians. Vol. XVIII. Philadelphia, 1903.

THIS volume is a record of much good work, and deserves to be carefully studied by physicians. Some of the articles are available for the medical reader elsewhere; *e.g.*, Professor Osler's paper on "Chronic Cyanosis with Polycythæmia and Enlarged Spleen: a new Clinical Entity," appeared in the *American Journal of the Medical Sciences* for August, 1903, and the same writer's third communication "On the Visceral Manifestations of the Erythema Group of Skin Diseases," will be found in the same *Journal* for January, 1904. Dr. George M. Kober writes on the transmission of bovine tuberculosis by milk, with a tabulation of eighty-six cases; he concludes that the pathologist has no occasion to reverse his opinion as to the identity of human and bovine tuberculosis. Dr. W. G. MacCallum contributes a paper on the production of specific cytolytic sera for thyroid and parathyroid, and Professor A. C. Abbott gives us a record of an analogous research on the adrenals. Dr. Trudeau writes on artificial immunity in experimental tuberculosis, and Dr. Theobald Smith describes a bovine bacillus from the human body. Dr. Henry Koplik writes on tuberculosis of the tonsils, Dr. Delafield on post-typhoid sepsis, Drs. Tyson and Frazier on a case of decapsulation of the kidney, Professor Simon Flexner on autolysis in lobar and unresolved pneumonia, Dr. William T. Howard on actinomycosis of the central nervous system, Drs. George Dock and Aldred S. Warthim on two cases of splenic anæmia, and Dr. J. H. Musser on primary cancer of the lungs. Dr. H. A. Hare writes on the bacteriolytic value of alcohol in the infections, and another important paper on the value of alcohol in disease is contributed by Dr. Richard C. Cabot. Dr. L. F. Barker describes the nervous system in two cases of hereditary ataxia from the well-known family series reported on a dozen years ago by Dr. Sanger Brown. A previous case from this family was studied histologically by Dr. Adolf Meyer about seven years ago. The morbid anatomy proves to be very constant in this family, the neurons which take origin in Clarke's dorsal nucleus showing a special tendency to succumb. In a French family which was reported on by other observers, the anterolateral tract of Gowers was the principal neuron-system which suffered.

The mere enumeration of the titles of a few of the articles in this volume does scant justice to their worth, but we may say that on first examination we marked quite a number of the papers for further and more detailed study. We recommend the volume to the attention of all scientific physicians, and we congratulate the Association on the excellent year's work it has accomplished.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D. Illustrated. Sixth Edition, thoroughly revised. London: W. B. Saunders & Co. 1903.

The fourth edition of this work was noticed at some length in this *Journal* three years ago. The fifth edition, which appeared in 1901, was reprinted in 1902 and 1903. The issue of a sixth edition towards the close of last year offers sufficient testimony to the great favour with which the book has been received, and we congratulate the author and publishers on the striking success they have attained.

Medical Laboratory Methods and Tests. By HERBERT FRENCH, M.A., M.D.Oxon., M.R.C.P.Lond. London: Baillière, Tindall & Cox. 1904.

THIS little handbook is intended to supply medical men with an account, in small compass, of the methods of testing ordinarily employed in the medical laboratory. The urine, blood, sputum, gastric contents, fæces, and serous exudations are included among the subjects of study. Parasitic affections of the skin also come under consideration, and tests are given for some common poisons. There are numerous illustrations, and altogether the book impresses us favourably when we bear in mind its modesty of purpose.

Football Injuries. By R. H. ANGLIN WHITELOCKE, M.D., F.R.C.S. Eng. London: J. & A. Churchill. 1904.

THIS interesting and instructive pamphlet gives us in printed form a paper read last year before the Medical Officers of Schools' Association.

The keynote to the treatment of such injuries is the avoidance of fixation and the employment of support, and, very soon afterwards, of active movements of the injured parts.

The paper has been written by one who evidently has had a large experience in the treatment of such cases, and will therefore commend itself to the reader. We may say that there are in its pages many practical hints which will be welcome to any medical man engaged in the practice of his profession.

The Management of Lateral Curvature of the Spine, Stooping, and the Development of the Chest in Phthisis. By F. NOBLE SMITH, F.R.C.S.Ed. London: Smith, Elder & Co. 1904.

IN this little volume Mr. Noble Smith has given us an outline of the general principles upon which the treatment of the above conditions is based. His remarks are founded on a wide experience, and so command attention.

We feel that we owe a debt of gratitude to the author for his giving us such a practical help towards the treatment of cases which are unfortunately of only too frequent occurrence, and we are certain that whoever takes up this book will derive both pleasure and profit from its perusal.

Functional Diagnosis of Kidney Disease, with Especial Reference to Renal Surgery. By DRS. LEOPOLD CASPER and PAUL FRIEDERICH RICHTER. Translated by DRS. BRYAN and SANFORD. London: Rebman, Limited. 1903.

WHEN the question of operating upon the kidney arises, the answer depends on the presence and functional efficiency of its sister organ. We have here a critical *résumé* of the various methods of examination usually employed to determine these points, and the conclusion is come to, that the surest of all methods, in deciding whether or not a second secreting kidney is present, is "cystoscopy in combination with catheterisation of the ureters."

The methods of estimating the functional efficiency of the kidneys are gone into fully. This is followed by their application in connection with simultaneous catheterisation of both ureters.

Particulars of ninety cases are given, and the authors bring to a close a most interesting study by formulating their conclusions.

These findings briefly amount to this:—The estimation of renal functional efficiency can be made from examination of the urine collected from each ureter separately; the points so determined are, the total quantity of nitrogen, the molecular concentration, the quantity of sugar eliminated by each kidney after the injection of phloridzin. The authors attach great value to the above points when considered together and when found in agreement one with the other.

The matter is carefully thought out and well presented, and the translation is admirable. The volume is one which will repay perusal, and which should have a place in the library of every surgeon.

Transactions of the American Surgical Association. Vol. XXI. Edited by RICHARD H. HARTE, M.D. Philadelphia, 1903.

DR. MAURICE H. RICHARDSON, of Boston, prefaces this volume with a thoughtful presidential address on "The

Contributions of Surgery to Internal Medicine." This address is one which all surgeons would do well to "read, mark, and inwardly digest." Its value, in our opinion, lies in the fact that it recognises that, while surgery has advanced much, it cannot perform impossibilities.

There are numerous papers dealing with the "toilet" of the peritoneum, and several contributions on *x*-ray work in the treatment of malignant disease. Hernia, and other intestinal conditions, cerebral tumours, myositis ossificans traumatica, and other subjects of interest are also represented.

A number of illustrations of considerable worth enhance the value of a volume which contains much interesting material.

A Practical Text-book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D., F.R.C.P. Sixth Edition, with 166 Illustrations, 4 Coloured Plates, and 74 Illustrative Cases. London: H. K. Lewis. 1903.

THIS little book of Dr. Lewers is still to be recommended as an excellent introduction to the study of the diseases of women. It is, however, to be regarded as only an introduction, and must be used by the student simply as a stepping-stone to more exhaustive discussion of the subject.

Essentials of Pelvic Diagnosis, with Illustrative Cases. By E. STANMORE BISHOP, F.R.C.S. Eng. Bristol: John Wright & Co. 1903.

WE would be inclined to place the *Essentials of Pelvic Diagnosis* in a totally different category from Dr. Stanmore Bishop, but while we doubt the utility of the book for students and junior practitioners, we must recognise the industry and ability shown by the author.

The method he follows is to take an important symptom and define the various classes of disease in which it is observed; these classes, again, are subdivided into groups which have other symptoms in common; then groups into sections, and so on, until the individual disease with all its details is correctly defined. The classes he forms are—(1) Swellings in the abdominal wall itself; (2) conditions affecting the perineum, external genitals, inguinal region, and skin, subdivided into groups as they affect the male, the female, or both sexes; (3) conditions affecting vagina, rectum, bladder and prostate; (4) pelvic conditions detectable by bimanual examination; (5) swellings connected with pelvic organs which have developed upwards so as to be within the abdominal cavity.

The book is introduced by a section on methods of diagnosis, and ended by a short but excellent chapter on the examination of the blood by Dr. C. H. Melland.

The form in which the book is issued deserves high praise, and the printer's errors, such as protoscope for proctoscope and scabaei for scabiei, are remarkably few for a first edition. Schirrus for scirrhus seems to be too consistently used to be a mere printer's error.

A Short Practice of Gynæcology. By HENRY JELLETT, B.A., M.D. Second Edition, Revised and Enlarged, with 223 Illustrations. London: J. & A. Churchill. 1903.

IN this new edition, Dr. Jellett's book forms an excellent introduction to the study of gynæcology, and ought to become a favourite with students. It is pleasantly written, brought well up to date both in the pathological and operative sections, and may be considered to supply all the information the student requires to fit him for an intelligent appreciation and efficient management of the gynæcological cases he is likely to see in practice.

Diseases of Women. By ALFRED LEWIS GALABIN, M.A., M.D., F.R.C.P. Sixth Edition, much enlarged, with 284 Illustrations. London: J. & A. Churchill. 1903.

TEXT-BOOKS on gynæcology are fast increasing in size as they are in number, and Dr. Galabin has taken the opportunity of a new edition to enlarge his book considerably. The enlargement was quite necessary to enable him to follow the recent developments of his subject, and this he has done with a fair amount of success. The main defect of the book lies in the attempt to combine the old with the new. But this defect may be regarded as rather a good quality by students "getting up" the subject for examiners who have mostly been educated under the old regime.

It is, perhaps, consideration for the needs of the student that has led Dr. Galabin to give details of treatment which he does not recommend, and to describe opinions with which he does not agree. It is possibly, also, out of a laudable desire to fit the student for his future work that he recommends certain methods of preventing pregnancy where this is wished by the patient. But we must confess that we would rather see his text-book free from these blemishes.

A Text-book of Diseases of Women. By BARTON COOKE HIRST, M.D. With 655 Illustrations, many of them in Colours. London: W. B. Saunders & Co. 1903.

THIS is a companion volume to Hirst's *Obstetrics*, and has the same commendable qualities as that excellent book. Gynæcology, however, is in a much more incomplete state than obstetrics, and, as might be expected, we find less satisfaction in the perusal of any work that attempts to survey the whole subject. Probably, indeed, it will be many years before gynæcology is in a condition to admit of a thoroughly scientific treatment. In the meantime, however, we can admire the progress that has already been made by the many active workers in this department of medicine, and the perhaps rather premature desire to systematise the results of that activity is indicated by the multiplicity of text-books which are being issued at the present time.

Among these text-books, this of Dr. Hirst will take a very high position, and to readers on this side of the Atlantic it especially commends itself by its marked freedom from Americanisms.

The printing and general "get up" of the book are excellent, and, with the exception of a few of the microphotographs, the illustrations also are admirable.

Clinical Studies in Syphilis. By A. H. WARD, F.R.C.S.Eng. London: The Medical Times, Limited. 1904.

THIS is an interesting essay on a perennially interesting subject. It is founded on the experience of the writer, and enriched by the teaching of facts noted and recorded by the well-known authorities of the past and present. To those who wish a new account of the disease, this little volume may be commended.

Archives of the Middlesex Hospital. Vol. I. London: Macmillan & Co., Limited. 1903.

THE publication of the *Archives* has for its object the recording of the work done in the different departments of the hospital, and it is proposed to issue not less than four volumes annually.

This opening volume contains nearly a dozen papers by various members of the staff. These contributions cover different portions of the field of medical work, and, in addition to medicine and surgery, biology, anatomy, and pathology are duly represented. Should the standard of the present volume be maintained, the *Archives* will soon come to be recognised as a valuable addition to the periodical literature of the day.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

BY JOHN G. GRAY, M.D., F.F.P.S.G.

Case of Primary Carcinoma of the Liver which weighed 25¾ Pounds—Increase in Body Weight—Diagnosis by Abdominal Paracentesis. By Dr. Robert Hurtin Halsey, New York (*The Post-Graduate*, May, 1904).—The patient was a married man, aged 43, an ironworker, and by nationality a Swede. He used tobacco and alcohol to excess, otherwise his personal history was good, as was also his family history. At his work as a constructor in the conduit of the underground trolley system he had to remain for long periods in a constrained posture, with his knees forced upon his chest. There was a history of injury a year before, which was doubtful.

For six weeks previous to his seeking medical advice he had been taking only fluid and soft food, and in small quantities, owing to the distress occasioned by the distension of the stomach. In September, 1903, he first noticed a swelling in the abdomen, and that he was losing flesh. On 20th November his weight was 209 lb., his usual weight being 214 lb. or 215 lb. He suffered at intervals from attacks of pain in different parts of the abdomen. He was advised to enter hospital, but delayed until 30th November.

His weight on admission was 203 lb. His cheeks were sunken, he had an anxious expression, and his eyes protruded slightly. There was a cold, clammy sweat on his forehead. Physical examination of the chest and abdomen showed flattening on the right side, extending downwards from the sixth rib in the nipple line. The upper border of dulness was situated 3 cm. above this. The sharp, smooth lower edge of the large tumour mass could be felt distinctly. It extended on the right side to below the level of the iliac crest. The lower border of the mass, from left to right, curved downwards towards the umbilicus, then turned sharply round it, and passed downwards and outwards towards the right iliac fossa. The surface was nodular. Two rounded, indistinct, bulging prominences were seen, one on either side of the middle line; each was about equidistant from the lower edge of the ribs and the lower border of the tumour. The heart was displaced upwards. The spleen could not be felt. Widal and malarial examinations were negative. The fæces were pasty and silvery white, and contained fat globules and epithelial cells. The urine was dark red; no mention was made of the presence of blood. It contained a trace of albumen. Indican was present in excessive amount. On one occasion a few hyaline casts were found. Aspiration of both prominences referred to, one on 4th December and the other on the day following, was performed. One c.c. of sanguineous fluid was obtained; it coagulated quickly in the syringe; the fragments obtained along with it were examined microscopically, and found to be carcinomatous. Death took place from heart failure on 12th December.

While in hospital patient's temperature varied between 98·6° and 101·2° F. His pulse ranged between 92 and 100, and his respirations numbered 24 to 28. In each case the curve of variation was irregular, and conformed to no particular type. The patient was increasing in weight, and yet losing flesh. His weight on 12th December was 215 lb.—12 lb. heavier than on admission. This was apparently due to œdema of the legs and thighs. The œdema was first noticed in the posterior or dependent parts of the thighs.

At the necropsy the liver was found to be enormously enlarged. The lower quadrant of the abdomen was about the only part not occupied by the liver. The surface was everywhere nodulated; some of the nodules were umbilicated. The increase in size was uniform, corresponding to the original shape of the organ. Four infiltrated lymphatic glands, each about the size of a pigeon's egg, were found in the transverse fissure. There was no involvement of the gall-bladder, and it contained no stone. The weight of the liver was 25·75 lb. The pancreas was small; there was, however, nothing abnormal as regards its consistency, naked-eye appearance, or histological characters. A minute examination of the body and organ failed to reveal any other abnormal deposit than that found in the liver.

The report on the histo-pathological characters of the neoplasm was furnished by Professor H. T. Brooks. He concludes his report by stating that the general histological features correspond to the structure of the adenocarcinoma, and that the strong resemblance of the cells to those of the bile ducts leads him to the diagnosis of adenocarcinoma of the liver, probably originating in the biliary ducts. Stained preparations were submitted to Professors Welsh, Councilman, and Ewing, and each of these gentlemen agreed with the diagnosis.

The author concludes his paper by commenting on the more notable features of the disease. It occurs about once in one thousand necropsies. The largest specimens reported vary from 16 to 24 lb. In about half of the cases the growth is uniformly distributed throughout the liver. Males are more frequently affected than females. It is a disease of adult life. Jaundice is usually very slight, and occurs late in the disease; in this case it was not present. According to Hale White, the silvery white fæces are an unusual occurrence. The duration of the disease is from two to four months. Only one case of melanosarcoma and one of melanocarcinoma are recorded.

The paper is illustrated by means of a diagram showing the area occupied by the tumour as mapped out clinically, and by plates from photographs showing the anterior surface and the cut surface of the liver, and the principal microscopical appearances of sections made in this case.

Rupture of an Aneurysm of the Aorta into the Superior Vena Cava. By Professor von Leyden, Berlin (Report of the proceedings at a meeting of the Association for Internal Medicine in Berlin, held on 21st March, 1904, *Deutsche Medizinal-Zeitung*, 28th March, 1904).—The patient was a workman, aged 57. When examined in the First Medical Department, on

29th February, 1904, the clinical picture presented was striking. The patient sat up in bed; the upper half of the body, viz., the face, chest, and upper extremities, especially the hands, were greatly swollen and œdematous, while the legs and external generative organs were entirely free from œdema. The venous congestion was marked; the distended veins were, however, masked by the œdema. The cyanosis, which was at first moderate, rapidly became extreme. Pulsation was felt on laying the hand over the manubrium sterni. Examination by means of the Röntgen rays disclosed an aneurysm of the aorta. Percussion yielded little result; the note over both lungs was, generally speaking, normal; the dulness over the sternum was very limited in extent; the cardiac dulness extended a little further to the left than normal. The strong heaving impulse of the heart was visible. On auscultation, two murmurs—one passing into the other—were heard in the neighbourhood of the aorta; they were humming in character and were heard over a limited area. They were inaudible over the carotids, or at the base of the heart. The radial pulse could be distinguished on pressing the finger sufficiently deep; the femoral pulse could be plainly felt. The symptoms had set in quite suddenly a short time before. On 13th February, when he was at his work, he felt as if he had received a blow in the region of the heart. This was accompanied by a slight feeling of giddiness. Next day both his eyes were swollen; then the swelling spread gradually over the upper half of the body, and his breathing became greatly distressed. Giddiness and a feeling of pressure in the head, together with epistaxis and oliguria supervened. The sudden development of the symptoms led Dr. von Leyden to the conclusion that he had to deal with a dissecting aneurysm of the aorta which had suddenly come to press very strongly on the superior vena cava. On the day after his admission to hospital the patient felt somewhat better, owing to the energetic employment of diuretics, but no real improvement was effected. He had attacks of difficulty in breathing, and pain in the breast at night which compelled him to get out of bed. These attacks were of short duration, and recurred each night. None of the members of the medical staff had an opportunity of observing the patient in one of these attacks, as they were of short duration. On 14th March his general condition became worse. He fell into a condition of stupor, and died suddenly on 15th March.

At the autopsy an aneurysm of the aorta, about the size of a hen's egg, was found. It lay upon the right auricle and superior vena cava, and compressed them. The veins of the neck were filled with thrombi; no thrombi were, however, found in the innominate veins. On opening up the aneurysm, the aortic curtains were found to be free.

Dr. Westenhoeffer gave further particulars regarding the preparation obtained at the *post-mortem* examination. It showed a typical sacculated aneurysm, connected with the aorta by a short neck, and containing a number of cavities. At one part the wall was very much thinned, so that in a very short time rupture might have taken place into the pericardial sac. The right auricle was quite hidden by the aneurysm; the superior vena cava was firmly adherent to the posterior wall of the aneurysm. A small perforation established communication with the superior vena cava; the edge of the opening was sharp, and it was presumed to have only existed for a few weeks. Sclerotic changes were observed in the wall of the aneurysm.

Ring Bodies in Anæmic Blood: Additional Forms. By Dr. Richard C. Cabot (*Boston Medical and Surgical Journal*, 24th March, 1904).—In the course of recent investigations on the subject, Dr. Cabot examined fourteen cases of pernicious anæmia in the active stages. Nine of these, or 64 per cent, showed the presence of ring bodies, more or less similar to those previously described (*Journal of Medical Research*, February, 1903). He also found them in anæmia secondary to lead poisoning, as well as in lymphatic leukæmia.

The results were negative in ten cases of leukæmia, composed of six of the lymphatic and four of the myelogenous type in the stage of remission; also, in nine cases of severe secondary anæmia from various causes, and twenty-two cases of skin diseases of various kinds.

Plates accompany the short article, showing some forms not previously illustrated. The author states that Dr. Charles E. Simon confirms his findings and pictures in the latest edition of his text-book on clinical diagnosis.

SURGERY.

By JOHN PATRICK, M.A., M.B.

The Treatment of Tuberculosis of the Lungs by Intra-pulmonary Injections of Iodoform and Glycerine Emulsion.

Gessner (*Centralblatt für Chirurgie*, 23rd April, 1904) narrates his experiences in this mode of treatment, which he has been encouraged to try in view of the brilliant results following the use of the method in tubercular disease of joints, results so satisfactory that many surgeons consider it to be a specific in these diseases.

In joint tuberculosis, the earlier the stage of the disease, and the nearer its seat the medicament is brought, the more prompt the action of the iodoform.

The question thus came to be—Could not the same means be adopted, *mutatis mutandis*, in lung tuberculosis with similar brilliant results? That the parenchyma of the lung will tolerate the moderate amount of surgical interference of the injection is practically certain in view of the advances made in lung surgery of late, going to prove that the lung tissue may be cut or stitched to a depth of several centimetres without severe bleeding. And, further, as far back as 1892, Illig and Rydygier successfully treated actinomycosis of the lung with injections of solutions of corrosive sublimate and potassium iodide respectively.

The finest possible needle is to be used, fitted to a syringe capable of holding 5 c.c. of a 10 per cent emulsion of iodoform and glycerine. The injections are made always from the posterior aspect into the lung, to reach the apex of the upper lobe a point two to three finger-breadths to the left or right of the spinous process of the first or second dorsal vertebra. The patient sits upright in bed, with the head held slightly forward. The skin is lightly frozen with chloraethyl (ethyl chloride), the needle is introduced at an angle of 45° to the horizon, and slowly pushed through the first intercostal space into the lung. To make certain that no large blood-vessel has been pierced, the body of the syringe is taken off, then replaced, and its contents injected with slow even pressure. The patient almost immediately complains of darting pain in the arm. To reach the upper part of the lower lobe, the point of insertion of the needle should be near the angles of the sixth and seventh ribs into the sixth intercostal space. The needle is inserted at an angle of 30° with the horizon, keeping the needle parallel with the middle line.

The author has met with no misfortune from hæmorrhage in his injections. The first injections were made in quite hopeless cases of phthisis pulmonalis, but the results were so unsatisfactory that only early cases were treated latterly, and the author made the observation that, as a general rule, the earlier the case the quicker and more surprising the result.

Case I.—Patient bedridden for two years. Both lungs tuberculous; suffering also from chronic diarrhœa with hæmorrhage and œdema of both legs. After two injections of 45 grains iodoform into the apices, the daily amount of sputum diminished very markedly, and remained so. The third injection miscarried, as the emulsion went into a cavity, and the patient forthwith coughed up iodoform. After a further injection into one of the lower lobes, the quantity of sputum and the cough both diminished, and the patient's general condition so greatly improved that she wished to leave her bed.

Unfortunately, a dietetic indiscretion a week later resulted in a severe intestinal hæmorrhage, which proved fatal in a few days.

CASE II.—Child. Tubercular disease of lung, tubercular ulceration of bowel, œdema of the legs. After two injections of 15 grains in both upper lobes, the cough diminished in an unmistakable manner; but after some weeks the diarrhœa, never less than four or five times a day, again increased; The lung symptoms also got worse, and the patient died.

CASE III.—Woman. Four years before a pleurisy, improved with change of air. Two years later, childbed followed by deterioration. After that some tuberculous glands were removed from the left side of the neck. After another pregnancy, which was artificially terminated, she fell back again, and had several hæmoptyses, tuberculous infection of glands on right side, and tuberculous disease of larynx. She had two injections of 45 grains in each apex, but without benefit, probably on account of the laryngeal infection; she died.

These were the first cases, and it was after the non-success of these that Gessner tried the method in early cases, although from these he was convinced of the power of iodoform to diminish the secretion of the lung substance.

CASE IV.—This patient's husband had died two years before of phthisis, and she had then been under Gessner's care for catarrh in the apex, with darting pain in the side; she had later hæmoptysis, night-sweats, and loss of appetite. After the first injection in the left upper lobe, the cough, the daily amount of sputum, and the "stitch in the side" diminished rapidly. After two more injections in the left lower lobe and right upper lobe, at intervals of ten to fourteen days, the night-sweats disappeared and the appetite returned.

CASE V.—This patient had been under treatment for several years by administration of creosote and other drugs. He complained of loss of appetite, "stitch" in the region of the apex of the heart, and morning cough lasting for an hour or more. After one injection in the left upper lobe, and especially after a second injection in the left lower lobe, all the symptoms disappeared and appetite returned.

CASE VI.—This was quite a new case of catarrh in the apex. For five weeks he was treated as an outdoor patient, then a hæmorrhage occurred, and he was taken into hospital. On the second day of his residence 5 grains of iodoform and glycerine were injected into the affected apex. On the second day following, the patient himself was astonished at the rapid diminution of his loud barking cough and of his spit. In three weeks the last traces of his cough and spit were gone. In five weeks he went back to his work.

The immediate result of the injection is pain in the injected area for two or three days; Gessner blames the glycerine for this. There is no rise of temperature.

The fittest place for carrying out this treatment would be a sanatorium, where attention would be paid to the dietetic, open-air, and other modes of treatment now recognised.—J. P.

Movable Kidney in Women.—In a paper upon this subject in the October number of the *Intercolonial Medical Journal of Australasia*, J. A. G. Hamilton, M.B. (Dub.), gynæcologist to Adelaide Hospital, emphasises the following amongst other points as regards the operative treatment to be followed:—

1. *The incision.*—The incision made by many operators in a direction parallel to the last rib has the disadvantage of cutting across muscle fibres, leaving a weak depressible scar. Further, the kidney is not easily exposed by it, and if it require to be extended, more muscular structures must be damaged.

2. *The structures through which the sutures should be passed to anchor the kidney.*—The passing of sutures actually through the kidney substance is unsurgical; such sutures injure the organ, may cause much bleeding, and this not only hinders primary union, but encourages sepsis. Further, they are apt to cut through when tied.

"The kidney capsule, fixed by mattress sutures, is the proper structure to use for fixation purposes. The fatty capsule can also be used to assist in anchoring the kidney."

3. *The last dorsal nerve.*—This should be properly isolated, and carefully avoided. If this is not done, lumbar neuralgia or numbness may result.

The following is an outline of the operation advised by Hamilton. It is based on anatomical considerations suggested to him by his friend, Professor Watson.

The skin incision (4 to 5 inches) commences as high as the eleventh rib, about an inch outside the outer edge of the latissimus dorsi muscle; from this point it is carried downwards and slightly backwards to the twelfth rib, close to the outer edge of the erector spinæ (if possible, without opening the sheath). The object of this is to avoid the muscular mass at the free end of the twelfth rib, formed by the costal insertion of the latissimus and external and internal obliques. It then curves slightly forwards in the direction, but not necessarily down to the highest point, of the iliac crest. The fibres of the latissimus are then separated (as recommended by Edebohls) from above, and followed past the twelfth rib, where the muscle becomes aponeurotic, and blends with the combined posterior aponeurosis. This is button-holed, some fibres of serratus posticus inferior being possibly involved. Through this opening the perirenal fat appears. The opening is enlarged downwards, exposing the outer edge of the quadratus lumborum more and more. The opening can be considerably enlarged by stretching. The perirenal fat is split open, stripped from the posterior aspect of the kidney, and removed. The fat in front is preserved, and used as a tractor to assist in delivery of the kidney. In tearing open the aponeurosis the last dorsal nerve is exposed, and is drawn forwards with the aponeurosis. A saddle-flap of the capsule is stripped from the kidney close to the hilum as far as the free edge of the organ. The kidney is then replaced; the flap is attached by three mattress sutures of catgut to the outer edge of the quadratus. The anterior perirenal fat is then drawn out of the wound and sutured to the lumbar aponeurosis, the excess being cut away. This helps to keep the kidney from slipping forward. The slit in the latissimus is closed with two catgut stitches, taking in some external oblique. The skin is closed with horsehair sutures.

The chief advantages claimed for this operation are:—

1. The incision leaves no weak spot, as all the structures can be readjusted.
2. Through it a kidney of normal size is easily delivered.
3. Without separating the quadratus from the iliac crest backwards, or the oblique muscles forwards, a kidney of large size can be delivered by simply nicking the aponeurosis, binding the last rib to the transverse processes.
4. The incision can be very easily extended should more room be required.
5. As regards the method of fixation of the kidney, the raw surface of the posterior face of the kidney is by this means brought into contact with the quadratus.
6. The preservation of the anterior portion of the perirenal fat is advantageous; it acts as a stay when fastened to the lumbar aponeurosis, and prevents forward movement of the kidney during the process of organised coalescence of the raw surface, thereby preventing undue strain on the delicate flap of capsule.—A. Y.

NERVOUS DISEASES AND INSANITY.

By Dr. R. S. STEWART.

Progressive Locomotor Ataxia. By Papadopoulos (*Le Progrès Médical*, 5th March, 1904).—Tabes in males in the Trebizond district is very rare, though syphilis is frequent, and in women is unknown, though these are as frequently syphilitic as men, and the women never drink alcohol. From which it is concluded that Fournier's view of the syphilitic origin of tabes is difficult to admit, so far, at least, as concerns the inhabitants of Asia Minor.

Epilepsy: Pathogenesis and Therapeutic Indications. By Paris (*Archives de Neurologie*, February and March, 1904).—This writer looks upon epilepsy as an expression of a disproportion between the original constitution, from the point of view of impressionability of the encephalic nerve centres, and their habitual stimulants emanating from the glandular organs whose function is to assure the continuity of the species, viz., reproduction and the regular development of the individual. The *rôle* of the ovaries and testicles, and, in particular, of the thyroid is regarded as highly important. If there is excessive functional activity of these glands, or insufficient elimination resulting in abnormal accumulation of their nerve-excitant products, the result, it is maintained, will be an epileptic manifestation if the nerve centres have that special impressionability which is designated the epileptogenous constitution; and as a means to the cure of the disease it is necessary (1) to diminish the meningo-encephalic excitability, (2) to moderate the functional activity of the thyroid and of the genital glands, (3) to ensure the regular elimination of their secretions, and (4) to prevent all complementary causes of encephalic excitation such as accidental development and accumulations of toxins, &c.

Salicin in Epilepsy. By Vincent (*Journal of Mental Science*, April, 1904).—In the case here recorded, a boy of 14, fits occurred, in number varying from 160 to 300 per month, and absolutely no improvement followed from treatment by anti-epileptic and numerous other remedies. After the exhibition of salicin in doses of 5 grains five times daily, the seizures began to decrease, and ceased somewhat suddenly, mental improvement following. Nine months afterwards, and while still taking one nightly dose of 5 grains of salicin and 10 grains of sodium bromide, there had been no return of the seizures.

In a number of other epileptics treated by salicin alone and in combination with bromides, no beneficial results followed, but the writer is of opinion that a more extended trial of this drug is justified in those cases in which the bromides have proved ineffectual.

Emission of N-Rays in some Pathological Cases. By Ballet and Delherm (*Archives de Neurologie*, April, 1904).—After having tried several models of screens, these observers adopted an arrangement in which a screen, 5 by 3 millimetres, was placed in one of the ends of a lead tube, 5 centimetres long, the other end being applied to the part to be investigated. In one case, a myopath affected with complete atrophy of the deltoid and incomplete atrophy of the muscles of the fore-arm, with integrity of the muscles of expression, the phosphorescence of the screen was normal in the face, less marked in the fore-arm, and very feeble in the deltoid. The emission of the *n*-rays appeared in this case to be directly proportional to the degree of muscular atrophy. In three cases of neuritis (toxic polyneuritis, unilateral lead neuritis of the extensors, peripheral paralysis of the facial), comparing corresponding muscles of the healthy side and of the diseased side, a marked feebleness of the brilliance of the screen was observed over the affected muscles. In several cases of infantile paralysis the phosphorescence was always much less over the paralysed muscles than over the corresponding muscles of the unaffected side. The conclusion is drawn that there is a diminution of the emission of *n*-rays over paralysed muscles in myopathy, neuritis, and polyneuritis, *i.e.*, in lesions of the peripheric motor neuron. On the other hand, the contrary has been observed in cases of alteration of the motor proto-neuron. In old hemiplegias with contracture from cerebral lesion, and in a woman affected with spasmodic paraplegia, the muscles augmented very much the luminosity of the screen, and in two cases of flaccid hysterical paralysis there was equally an exaggeration of the phosphorescence on the paralysed side.

MATERIA MEDICA AND THERAPEUTICS.

By JOHN WAINMAN FINDLAY, M.D.

The Dietetic Treatment of Diabetes.—Robert Hutchison (*Pract.*, 1904, p. 800) discusses this question at some length.

Most of the symptoms are the result of the presence of sugar in the blood in excess, and the sugar-assimilating power of the tissues is more or less impaired, A dietary free from carbohydrate tends to prevent the occurrence of many symptoms, and by continued rest from work the power of the tissues to assimilate sugar is, to some extent at least, regained.

A rigid dietary is not, however, suitable for every case of diabetes. In some persons, a certain amount of carbohydrate food can be made use of without the accumulation of sugar in the blood; in others, even the smallest amount of starchy food causes glycosuria.

It is important in the first group of cases to estimate how much carbohydrate can be assimilated without glycosuria resulting, and to keep the intake below that amount. From time to time—twice a year—a strict dietary should be resorted to for a short period.

In the second group of cases, the indications are less clear, and it is necessary to ascertain the presence or absence of the acetone series (acetone, diacetic acid, β-oxybutyric acid). If these are absent, a strict dietary can be at once instituted, gradually or suddenly, and maintained so long as the general symptoms improve. In the course of a few weeks, experiments may be made to see whether any tolerance of carbohydrate has been recovered, and some slight additions to the dietary may be tried, the urinary condition being closely watched.

If diacetic acid is present in the urine, a change in the dietary should be made very slowly, for such a patient is always in danger of coma, and it may apparently be precipitated by the sudden removal of all carbohydrate food. The amount of proteid should not exceed 500 grammes per diem, and sodium bicarbonate should be given freely at the same time.

If the general nutrition of the patient fails, or if symptoms of coma threaten, some bread and milk should at once be added to the dietary.

Fats are the most important item of the diabetic's food, as no sugar can be formed from them; and the patient should be encouraged to eat large quantities of butter, bacon, Devonshire cream, salad oil, &c. Alcohol seems to assist their assimilation. The gluten breads contain little nourishment, and often much starch, but the casein breads are pure and more palatable. Milk, in some patients, is not well borne, in which case it may be given freely in the sugar-free form. In diabetes in gouty or elderly patients, it is, however, often of use.

In *coma*, a dietary of skimmed milk, with large quantities of water, is indicated, and bicarbonate of soda in full doses should be given; alcohol, too, may be given freely.

Croftan (*Jour. Amer. Med. Assoc.*, 1904, vol. i, p. 817), discussing the same question, makes very similar remarks. He emphasises the importance of estimating the "carbohydrate capacity" of each individual patient, and of allowing some carbohydrate food in the severe cases, to prevent or ward off coma. Deprivation of carbohydrates, too, often leads to failure of appetite, and it is important to ensure as good digestion as is possible, for the loss of sugar by the urine necessitates a very large intake of food-stuffs if equilibrium of nutrition is to be maintained. It is difficult to obtain it on a dietary of fats and proteids alone, although "stomach hunger" may be appeased with comparative ease.—J. M. C.

Secretin, Acid Medication of the Duodenum, Stimulation of the Secretinic Functions in Man (*Gaz. des Hôp.*, 1904, p. 187).—Recent physiological researches have demonstrated in a precise fashion the important rôle played by the duodenum in digestion. The mucous membrane of the duodenum and of the upper jejunum contains a substance called *secretin*, which, on contact with any kind of acid substance introduced into the duodenal lumen, passes into the general circulation (Enriquez and Hallion) to stimulate the biliary secretion and to provoke the pancreatic secretion. Quite lately, too, MM. Delezenne and Fronin have shown that this same substance likewise excites the secretion of the intestinal juice, and Hallion has proved that, over and above its excito-secretory properties, it possesses to the same degree an excito-motor property, especially on the motility of the intestine.

Applying these recent acquisitions of knowledge to clinical work, M. Ed. Enriquez has thought that every pathological condition capable of modifying in man the occurrence of this secretinic function will, in consequence, cause a disorder of the different secretions, biliary, pancreatic, and intestinal, and will give rise to the clinical syndrome of intestinal dyspepsia. If we recollect, at the same time, the very special influence that secretin has on the motility of the intestine, we have no difficulty in understanding how one of the first signs of this secretinic insufficiency will be constipation. In such conditions, it seemed to M. Enriquez that the solution of the therapeutic problem lay in stimulating the different secretinic functions by imitating the normal physiological mechanism—that is to say, by causing an acid to come in contact with the duodenal mucous membrane.

Acid medication by the stomach proved untrustworthy, since the gastric juice modified—sometimes seriously—any acid ingested, so recourse was had to a procedure which has already afforded good results, viz., enveloping the acid in a thick covering of gluten, a substance refractory to gastric digestion in an acid medium, but, on the contrary, easily attacked in an alkaline medium. Capsules of gluten containing the acid (tartaric acid) are administered, and these pass through the stomach without emptying their contents; while, as soon as they arrive in the duodenum, they are digested by the pancreatic juice, and, the tartaric acid they contain coming in contact with the duodeno-jejunal mucous membrane, there is accomplished in the clinique the same result as Pawlow obtained in the laboratory.

Researches were carried out on sixteen dyspeptics, all of whom suffered from habitual constipation. In seven cases where constipation was the dominant symptom, this medication caused the bowels to move regularly by stimulating the secretory and motor functions of the intestine. In five cases, in addition to constipation, there was also muco-membranous colitis, which was likewise rapidly ameliorated at the same time as the constipation. Finally, in three cases of neuro-motor dyspepsia, acid medication of the duodenum had a most rapid and favourable influence on the subjective symptoms—heaviness, somnolence, flatulence, &c.

The constancy and the repetition of results allow Enriquez to conclude that acid medication of the duodenum has indubitably a stimulating action on the secretinic functions in man; and it is easy to understand how, in acting on the biliary, pancreatic, and intestinal secretions on the one hand, and in exciting on the other hand the motility of the intestine, this acid medication, by the simple exaltation of the normal physiological mechanism, can cause a favourable modification in diverse cases of intestinal dyspepsia.—J. W. F.

DISEASES OF THE EAR.

By WALKER DOWNIE, M.B., F.F.P.S.G.

Osteomyelitis of the Temporal and Adjacent Bones of the Skull as a Sequel of Otitis Media Suppurativa. By Dr. C. Richardson, Washington (*Archives of Otology*, February, 1904).—Although osteomyelitis affects long bones chiefly, flat bones are not exempt. The micro-organisms which are most potent in its production—the staphylococcus pyogenes and the streptococci—may gain access to the area affected through the lymph channels or nerve sheaths, or directly through the medium of the circulation. When the temporal and adjacent bones are affected, as a complication of suppurative otitis, the osteomyelitis is caused by direct infection. Two cases are reported by Dr. Richardson, by which he draws attention to the fact that, besides the local symptoms, the most characteristic symptom is the profound constitutional intoxication—general depression and high temperature.

In such cases, it will be found that the disease extends beyond the confines of the antrum and mastoid process. In the second case reported, the wound was enlarged in the superior and posterior directions, and the outer table of the squamosa was followed up to the parietal suture before healthy bone was encountered. Most of the cells forming the diploë of the bone were filled with pus. Recovery followed the very free removal of all affected bony tissue.

Tubercle-like Bacilli in the Discharge of Chronic Purulent Otitis. By Dr. A. de Simoni, Milan (*Archives of Otology*, February, 1904).—Recently it has been shown that bacilli exist which are very similar to those found in tuberculosis, as far as morphology and colouring are concerned. They can be differentiated by a peculiar growth on artificial media, and by animal experimentation. These bacilli occur frequently in milk and in commercial butter, and have also been found in infusions of several field herbs and in the fæces of herbivora.

Different observers have ascertained the presence of pathogenic acid-fast bacilli, other than tubercle bacillus, in various affections of the organism.

Dr. Simoni describes two cases of double middle-ear suppuration where, on examining the discharge, he found in those specimens stained for tubercle bacilli a great many long slender bacilli, grouped together, and resembling tubercle bacilli. They were longer, however; their protoplasm was greater in quantity and more homogeneous. By subsequent cultures and by animal inoculations, they were shown to be destitute of virulence and toxic qualities, while yet belonging to the "acid-fast" group.

The Pathology of Deaf-mutism. By Dr. Hermann Holzel, Munich (*Archives of Otology*, February, 1904).—While deaf-mutism may be either congenital or acquired, most authors agree that in the majority of cases it is acquired. The hearing is destroyed before the child learns to speak, or if later, speech is lost on account of the total deafness. In this paper, Dr. Holzel gives particulars of a case of acquired deaf-mutism in which he had the opportunity of making a careful examination of the parts *post-mortem*.

The dissection of the temporal bone showed the sequelæ of a middle-ear inflammation with obliteration of the tympanum, aditus, and antrum. New-formed connective tissue and compact bone were found at the inner part of the meatus, in the middle ear, in the tympanum, in the cochlea, in the vestibule, and the semicircular canals.

The quality of the nerve could not be determined, as the specimen had been in alcohol for a long time, but quantitative changes could be demonstrated. The trunk of the auditory nerve, as far as the cochlear branch was concerned, was not diminished in size, but in the canaliculi of the modiolus, the absence of a large number of nerve fibres was plainly observed. Between the lamellæ of the lamina spiralis ossea, as far as these were preserved, there were only indications of nerve fibres. The changes observed showed not only destruction in the middle ear and labyrinth, but also new formation of connective tissue and bone.

These changes appear to have been the result of a chronic purulent disease of the middle ears, beginning in early life, as the loss of speech followed the loss of hearing. The new-bone formation in the tympanum, leading to the occlusion of both windows, would of itself have been sufficient to explain the loss of hearing, while the changes in the inner ear were of such a character that they alone would have caused, if not absolute deafness, at least extreme hardness of hearing.

PATHOLOGY.

By ALEX. R. FERGUSON, M.D.

The Etiology of Adrenal Hæmorrhage.—Mr. Leonard S. Dudgeon, M.R.C.P.Lond., in the *American Journal of Med. Sciences* for January, 1904, gives notes of four cases of adrenal hæmorrhage, and comments upon the etiology, pathology, and diagnosis of the condition.

The following summarises the important points in each case:—

"CASE I.—Thrombosis of the superior longitudinal sinus and the cerebral and cerebellar veins; pin-point hæmorrhages into the left adrenal gland and left kidney; thymic abscess; staphylococcus aureus and albus cultivated from the heart blood; age of patient, 2 years and 8 months.

"CASE II.—Extensive burn; large hæmorrhage into the right adrenal gland, associated with symptoms which rather pointed toward an acute lesion in the abdomen; age of patient, 6 years.

"CASE III.—Gangrenous varicella; tubercular mesenteric glands; tubercular ulceration of the intestines; double adrenal hæmorrhage; pure culture of the pneumococcus, isolated from the heart blood and from the adrenal glands. The patient was aged 1 year and 10 months.

"CASE IV.—Broncho-pneumonia; sudden death; double adrenal hæmorrhage. The child was 14 weeks old."

To the classification by Arnaud of cases of adrenal hæmorrhage into (1) the asthenic type, (2) the peritoneal type, (3) the nervous type, Dudgeon would add—

(4) Cases with very acute onset and many symptoms which would suggest an acute specific fever,

(5) Cases with severe skin lesions, purpura, &c., but not suggesting an acute specific fever,

(6) Cases in which the adrenal hæmorrhage occurs as a complication of some pre-existing disease, and is only recognised at the autopsy,

(7) Cases of hæmorrhage in the newly-born.

Regarding the etiology of the condition, Dudgeon thinks that "in most cases the term 'idiopathic' might justly be applied."

The following facts are cited by Dudgeon as more or less definitely established regarding adrenal hæmorrhage:—

(*a*) It may be due to a gastro-intestinal infection.

(*b*) It is common in the newly-born.

(*c*) It may occur both in acute and in chronic lung and cardiac disease, and in convulsions—in fact, in any disease known to produce venous stagnation or a marked increase in blood pressure.

(*d*) It may take place in septicæmia, pyæmia, acute miliary tuberculosis, and the toxæmia from severe burns, &c.

(*e*) It may be associated with the so-called blood diseases—*e.g.*, scurvy, &c.

(*f*) It may result from trauma—such as injuries to loin, back, abdomen, &c.

(*g*) It is sometimes found at autopsies on chronic diseases of the nervous system—*e.g.*, general paralysis of the insane.

The opinion held by some observers as to the importance of congenital syphilis in adrenal hæmorrhage is not regarded by Dudgeon as substantiated. —A. Y.

Books, Pamphlets, &c., Received.

Manual of Surgery, by Alexis Thomson, M.D., F.R.C.S.Ed., and Alexander Miles, M.D., F.R.C.S. Ed. Vol. II: Regional Surgery. Illustrated with 156 Wood Engravings. Edinburgh: Young J. Pentland. 1904.

Wounds in War: the Mechanism of their Production and their Treatment, by Surgeon-General W. F. Stevenson, C.B., A.M.S. Second Edition. With 127 Illustrations. London: Longmans, Green & Co. 1904. (15s. net.)

Tuberculosis and Acute General Miliary Tuberculosis, by Prof. Dr. G. Cornet, of Berlin. Edited, with Additions, by Walter B. James, M.D. Authorised Translation from the German, under the Editorial Supervision of Alfred Stengel, M.D. London: W. B. Saunders & Co. 1904. (21s. net.)

The Extra Pharmacopœia, Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.D. Lond., D.P.H. Eleventh Edition. London: H. K. Lewis. 1904. (9s. 6d. net).

A Manual of Ambulance, by J. Scott Riddell, C.M., M.B., M.A. Fifth Edition, Thoroughly Revised and Enlarged. With Frontispiece, 20 Full-Page Figures, and 156 Illustrations in the Text. London: Charles Griffin & Co., Ltd. 1904. (4s.)

A Manual of Surgical Diagnosis, by James Berry, B.S., F.R.C.S. London: J. & A. Churchill. 1904. (6s. net.)

Uric Acid: An Epitome of the Subject, by Alexander Haig, M.A., M.D.Oxon., F.R.C.P. London: J. & A. Churchill. 1904. (2s. 6d. net.)

Elements of General Radio-Therapy for Practitioners, by Dr. Leopold Freund. Translated by G. H. Lancashire, M.D. With 107 Illustrations in the Text and one Frontispiece. London: Rebman, Limited. 1904. (21s. net.)

Obstetric and Gynæcologic Nursing, by Edward P. Davis, A.M., M.D. Second Edition, Revised. London: W. B. Saunders & Co. 1904. (8s. net.)

The Prevention of Disease in Armies in the Field, by Robert Caldwell, F.R.C.S., D.P.H. London: Baillière, Tindall & Cox. 1904. (5s. net.)

How to Become a Certified Midwife, by E. L. C. Appel, M.B., B.S. London: The Scientific Press, Limited. (1s. net.)

An Atlas of Human Anatomy for Students and Physicians, by Carl Toldt, M.D., assisted by Professor Alois Dalla Rosa, M.D. Translated from the Third German Edition and Adapted to English and American and International Terminology, by M. Eden Paul, M.D. Fourth Section: *E*, Splanchnology (Figures 641 to 932 and Index). London: Rebman, Limited. 1904. (9s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 18TH JUNE, 1904.

	WEEK ENDING			
	May 28.	June 4.	June 11.	June 18.
Mean temperature, . .	52·7°	58·2°	55·8°	55·9°
Mean range of temperature between day and night, .	18·3°	21·6°	18·0°	13·9°
Number of days on which rain fell, ...	4	2	0	6
Amount of rainfall, . ins.	0·69	0·18	0	0·63
Deaths registered, . . .	262	278	247	275
Death-rates, ...	17·1	18·1	16·1	17·9
Zymotic death-rates, . .	1·6	2·4	2·7	2·2
Pulmonary death-rates, .	4·6	4·9	3·6	4·8
DEATHS—				
Under 1 year, . . .	63	65	40	57
60 years and upwards, .	56	54	53	58
DEATHS FROM—				
Small-pox, ...	1	2	3	3
Measles, ...	2	2	8	4
Scarlet fever, ...	1	1	2	1
Diphtheria, ...	2	...	1	2
Whooping-cough, . .	9	16	9	10
Fever, ...	...	...	1	...
Diarrhœa, ...	7	14	12	12
Croup and laryngitis, .	..	...	...	...
Bronchitis, pneumonia, and pleurisy, . . .	37	40	28	48
CASES REPORTED—				
Small-pox, ...	34	12	20	31
Diphtheria and membranous croup, ...	9	1	6	12
Erysipelas, ...	14	15	16	23
Scarlet fever, ...	22	28	17	26
Typhus fever, ...	...	...	...	...
Enteric fever, ...	7	5	10	10
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	1	2	...	1
Measles,*	159	116	86	88

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *23rd June, 1904.*

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ORIGINAL ARTICLES.

CASE OF CHRONIC LYMPHATIC LEUKÆMIA.[1]

By JOHN WAINMAN FINDLAY, M.D.,

Assistant Physician to the Glasgow Royal Infirmary, and Assistant to the Professor of Medicine in St. Mungo's College.

A. P., aged 60, first came under observation on 25th April, 1904, complaining of weakness and breathlessness of sixteen years' duration, and of pallor and enlargement of the lymphatic glands of two years' duration.

Past history.—In the year 1860, when 17 years of age, he joined the army, and very shortly thereafter contracted what he tells me was diagnosed as a hard chancre; at the same time he suffered from a suppurating bubo. He informs me that his chancre was cauterised. These complaints kept him in hospital for six weeks, and he asserts that he received no internal medication, local remedies alone being used. Towards the close of 1860, he was sent to India (Bombay Presidency), and he remained there till 1866. He declares that the Bombay Presidency is noted for its non-malarious character. In 1862, he suffered from an acute orchitis, and in 1863 he had an attack of sunstroke. During the years 1866 to 1870, he was stationed at home, and in 1870 he was again ordered to India. His second period of Indian service was spent in the Bengal Presidency, where "fever and ague" were very prevalent, and in 1875 he was seized with "fever and ague," and was confined to hospital with the same for about six weeks.

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[1] Read at a meeting of the Glasgow Pathological and Clinical Society held on 9th May, 1904.

In 1880, patient returned to this country, was discharged from the army, and took to clerking. His first winter in Glasgow started a bronchitis, which has hardly ever left him since, and in 1888 his bronchitis had become so chronic and troublesome that he was unable to go regularly to his work, and unfit to remain as a servant, so he became his own master and opened a small furniture shop. This venture gave him a lot of anxiety and worry, his health and strength kept on gradually failing, and in 1894 he gave up business altogether.

In 1895 a swelling appeared on the back of his head, and increased in size till it was larger than a duck's egg. This was diagnosed as a gumma, and he took medicine, containing mercury, for six months, by the end of which time, he declares, all his teeth were quite loose. During the first few weeks of treatment, the lump slowly diminished in size, and before the six months of treatment were up had disappeared without suppurating. In 1897, a *gummatous* (?) swelling appeared at the back of his neck, was poulticed for about a month with porridge and soda, and then "broke," discharging for about sixteen weeks. In 1898, he suffered from two similar swellings—one over the left mastoid process, the other just below the occipital protuberance—and these, under like treatment, ran much the same course as that in 1897. No sooner had the *gummata* in the neck healed than he developed "erysipelas" in the face, and this affection spread down the arms into his hands. He says that his face, arms, and hands, were red, œdematous, and greatly swollen at this time, and that leeting and crusting occurred in all these places. The eruption was very itchy, and persisted for a good many weeks. It seems highly probable that this was an eczematous condition. In 1899—when aged 56 years—a *gummatous* swelling made its appearance on the inner side of his right leg, just above the ankle, and this, after much assiduous poulticing with porridge and soda, occasionally intermitted for anything else that a neighbour might suggest, "broke" in a great number of places, there being many holes, he declares, just as though someone had gone over this part of his leg with a punch. This *gumma* discharged for many months, but did not confine him much to bed. When the leg was "running," he noticed that the glands in the right groin got very large, tender, and painful. Though the pain and the tenderness went away when the leg healed up, the glands remained swollen, and have never varied in size since. While afflicted with his leg, he suffered from an eruption, which was dry and covered with thick white, almost silvery, scales on the sole of the right foot. [This eruption may have been a syphilitic psoriasis.] During 1899, he drank large quantities of an infusion, which he made himself from sarsaparilla root, chiretta bark, and other "herbs."

Since 1899, he has had every few months an attack of what he calls "erysipelas." This affection starts as a redness over the bridge of his nose, and gradually spreads till the whole face is affected. It is intensely itchy, and his face swells up to such an extent that frequently his eyes become quite closed. At these times, too, large blisters, the size of shillings, form on his face; he himself, or his wife, usually "jags" these blisters with a needle, which procedure allows a lot of "water" to escape. This eruption sometimes only takes a few hours to reach its height, but may take a day, and frequently he goes to bed all right and wakens in the morning with his face badly swollen. He always feels cold and shivery when this affection comes on, but never vomits, nor does he suffer from headache. When this trouble was fairly developed, it, as a rule, remained very bad for about three days, and then slowly faded away.

He has frequently suffered from a "rash" on his buttocks, identical, his wife declares, to an eruption in the same locality which I diagnosed as herpes on 5th May, 1904.

History of present illness.—Though patient had been weak and very breathless for many years, he remained "well coloured" until 1902—about two years ago—when his friends commenced to remark to him that he was getting very pale. About much the same time he himself became conscious that he was losing weight, and that his lymphatic glands were swelling. First he noticed "lumps" under his chin, and these grew till in the course of two or three weeks they attained the size of "plunkers," after which they got smaller till they became little larger than haricot beans. Then his attention was drawn to the fact that the glands at both sides of his neck were swelling. Next, he observed that the glands in the left axilla were enlarging, and he declares that these formed a mass the size of a tennis ball, and then slowly subsided. The glands in the right axilla became enlarged shortly after those in the left. As already mentioned, the glands in the right groin swelled up when the ulcers in his leg were discharging

(1899), and he does not think that they have varied in size since. He cannot say when the glands in the left groin became involved.

These glandular swellings in the neck and axillæ all made their appearance within the course of three or four months, and during the last eighteen months he has frequently remarked considerable fluctuations in their size; they would swell up to a very noticeable extent in one situation and then go down again, only to become unduly prominent in some other region. At different times he has noted the presence of enlarged glands in the infra-axillary regions, in the flanks, and even on the surface of his abdomen. There have never been any glandular tumours in the popliteal spaces or about his elbows. Never at any time were the glands painful or tender, but at times he suffered much from pains in his arms, especially about his elbows, and frequently he had muscular cramps and pains in his legs. He has never had headache, nor pain in his neck.

Only during the last year did he begin to notice that his face and eyelids were swollen in the morning, and that his feet and legs swelled after he had been out of bed for a short time.

He has never had any fainting fits or attacks of giddiness, and he has never suffered from palpitation; breathlessness, however, has been getting more marked all the time, and, lately, even speaking makes him very short of breath. His dyspnœa has practically kept him a prisoner in the house for the last six months.

During the first year after the glandular tumours appeared he very frequently had small bleedings from the nose, and for the last two years he has suffered every now and then from an obstruction of his nostrils—sometimes only one nostril—which is only relieved by the discharge of firm plugs of dried secretion, about the size of his little finger. Occasionally, during the last two years, he has coughed up a little blood. He has never vomited blood, no more has he at any time observed blood in his urine or fæces, and he declares that his motions were never at any time abnormally dark in colour. There have been no bleedings into or under the skin, and he has never suffered from any auditory or visual disturbances.

For several months past he has suffered from pain and tenderness over the lower half of the sternum. He has never had pain or tenderness in any of the other bones, if we except the pains in right elbow-joint already alluded to.

His appetite has been good throughout, and gastric and intestinal disturbances have been completely absent. He declares that he never sweats. Since the present illness commenced he always feels at his best in the morning.

Physical examination.—Patient's entire skin is remarkably pale, though when his temperature is elevated in the afternoon and evening, as happens not infrequently, there is a distinct malar flush. The conjunctivæ and buccal mucous membrane show a marked degree of pallor. The face is swollen; the eyelids are "puffy," and pit on pressure. As he lies in bed there is no swelling of feet or legs. His limbs are thin, and his muscles are flabby and weak. There is not much subcutaneous fat.

Over the right side of the occipital bone, close to the lambdoidal suture, a depression, not involving the entire thickness of the bone, and admitting the points of two fingers, marks the site of the gummatous swelling that disappeared without suppuration under treatment. Just below the occipital protuberance are several irregular puckered scars, and another scar exists over the left mastoid process—results of the *gummata* which suppurated. Over the lower third of the inner aspect of the right tibia is an irregularly, and deeply, pigmented area, dotted over with numerous round cicatrices, slightly depressed, with flat, pale, and silky surfaces, and varying in size from that of a split pea to a threepenny piece.

All the glands of the neck are enlarged; all are freely movable under the skin and over the deeper lying structures. The majority resemble almonds, haricot beans, marbles, and small plums in shape and size, and no very large glandular masses are seen or felt. All the glands are soft, some are very soft, though not at all of that softness which suggests fluctuation. The submaxillary lymphatic glands, including the suprahyoid, the superficial cervical, the deep cervical, the mastoid, and the parotid on the right side are all involved. A chain of glands is felt extending from the clavicle to the axilla on both sides, though more marked on the left. In the left axilla are several masses made up of numerous enlarged glands, somewhat adherent to one another, though not firmly matted together; here the largest mass equals in size that of a hen's egg. The right axilla contains many glandular masses as large as victoria plums, though none of the individual glands are so large as on the left side. Two isolated glands, the size of haricot beans, are present in the left infra-axillary region. No glands can be detected in the popliteal spaces or about the elbows. Both the oblique and vertical sets of superficial inguinal glands are enlarged on both sides, as also are, I should say, the deep-seated inguinal glands, and large glandular masses can be traced along the course of the external iliac vessels. The glands are larger, more numerous, and somewhat harder in the right than in the left groin: the gumma which suppurated was in the right leg.

The tonsils are not at all enlarged, and there is no excess of lymphoid tissue about the base of the tongue. The thyroid gland is not enlarged.

An examination of the chest reveals the presence of chronic bronchitis and emphysema. No dulness suggesting enlargement of the mediastinal lymphatic glands or thymus can be made out, and there is no difference in the quality of the respiratory murmur on the two sides. He has a very troublesome cough, and copious muco-purulent expectoration.

Some dilated venules are present about his cheeks. The external jugular veins are somewhat prominent, and a good many moderately dilated veins are seen over the upper part of the chest on its anterior aspect. The veins in his arms are also unduly prominent, and the superficial epigastric veins are moderately distended, the blood flowing normally, however, viz., from above downwards.

Heart.—Diffuse pulsation is seen and felt in the fifth left space, 3 inches from the middle line. Cardiac dulness is all but obliterated by emphysematous lungs. The heart sounds, though weak, are unaccompanied by murmurs, and there is no venous hum to be heard in the neck. The temporal arteries are hard and tortuous, and the radial arteries are large, tortuous, and beaded with calcareous deposit. The pulse is regular and weak, and numbers from 84 to 96 per minute.

Abdomen.—Flatulent distension of the abdomen prevents me arriving at any conclusion as to the state of the abdominal lymphatic glands, apart from the external iliac already mentioned. There is no fluid in the peritoneal cavity. The spleen is moderately enlarged, measuring in length 6½ inches; it reaches three finger breadths below the costal margin—about 2½ inches—and the splenic dulness begins above at the level of the tenth rib. The spleen does not feel unduly hard; no notch is detected. The liver is also enlarged, and is displaced downwards to a slight extent; in the middle line its vertical measurement is 3½ inches, in the nipple line 6 inches, and in the axillary line 7 inches. Owing to the exceeding softness of the liver, its lower edge is palpated with difficulty. No enlargement of the kidneys can be detected. Urine, on standing, shows a considerable deposit of pale pink urates; a faint haze of albumen is present, but no blood and no sugar. On microscopic examination a few hyaline casts are seen.

There are no signs to suggest disease of the nervous system. The knee-jerks are active; plantar reflexes are present, and flexor in type. Pupils are slightly unequal, the right being the larger, but both contract actively to light and on accommodation. Apart from pallor, an ophthalmoscopic examination reveals no abnormality. Hearing is quite good, taste is normal, but sense of smell is absent.

An irregular pyrexia is present; the morning temperature ranges between 97° and 98° F., and the evening record between 99° and 103° F.

Blood examinations (25th April, 1904, 4·15 P.M.)—

Red corpuscles, ...	1,175,000
White „	152,500

Ratio of white to red, about 1 in 7.

Differential count—

Small lymphocytes, ...	95	per cent.
Large „	1·9	„
Polymorphonuclear neutrophiles, . .	2·5	„
Transitional forms, ...	0·2	„
Myelocytes, ...	0·1	„

1st May, 1904 (3·30 P.M.)—

Red corpuscles, ...	1,343,600
White „	334,800

Ratio of white to red, about 1 in 4.

Hæmoglobin, ...	25·5 per cent.

Colour index, $\frac{25\cdot5 \text{ per cent hæmoglobin}}{26 \text{ per cent red corpuscles}}$ = practically unity.

Differential count (by Dr. Leonard Findlay)—

Small lymphocytes, ...	96	per cent.
Large „	2	„
Polymorphonuclear neutrophiles, . .	2	„
Transitional forms, ...	0	„
Myelocytes, ...	0	„

8th May, 1904 (3·30 P.M.)—

Red corpuscles, ...	1,424,000
White „	568,660

Ratio of white to red, about 1 in 2·5.

Hæmoglobin, ...	30 per cent.

Colour index, $\frac{30 \text{ per cent hæmoglobin}}{28\cdot4 \text{ per cent red corpuscles}} = 1\cdot05 \therefore + 0\cdot05$

The small lymphocytes vary greatly in their affinity for nuclear stains, and show considerable differences in size. Somewhat frequently it is difficult to determine whether a particular lymphocyte should be classed as large or small, but I have only counted as large lymphocytes those cells about which there could be no doubt whatever. In some films, numerous deformed or tattered and poorly-staining lymphocytes of large size—degeneration forms (?)—were seen. Mitosis was not once observed. Eosinophilic cells are very scanty; none were seen while the differential counts were being made. Though the red corpuscles vary in size and in their affinity for stains, it cannot be said that poikilocytosis exists. A few nucleated red corpuscles, both normoblasts and megaloblasts, were detected in the films prepared on 8th May.

Remarks.—The great rarity of this condition is my excuse for reporting this case, which would seem to be quite a typical example of chronic lymphatic leukæmia or chronic lymphæmia.

That it is not Hodgkin's disease is shown by the great increase in the number of white blood corpuscles; and the fact that this increase is due to a lymphocytosis distinguishes this case from one of spleno-medullary leukæmia. A lymphocytosis may be met with in lymphosarcoma, but never to the extent that obtains in this patient; besides, the widespread involvement of the lymphatic glands would of itself exclude such a diagnosis.

The presence of small lymphocytes to the extent of 95 per cent, and the scantiness of the other white cells, are quite in accord with the usual findings.

The number of red cells in this case is decidedly low. Thus, Cabot[1] gives, as the average of seven of his cases, 2,900,000, though in this are included counts of 912,000 and 700,000; and Osler[2] gives 2,294,000 as the average of red cells in his series; Muir, however,[3] declares that the red corpuscles may be diminished to such an extent that they number only 1,000,000 or even less, and Rosenfeld[4] reports a case where the red cells were only 1,210,300.

The number of white cells in this case is fairly high, and the ratio of white to red corpuscles—1 to 7, 1 to 4, and

[1] *A Guide to the Clinical Examination of the Blood*, 1898, p. 171.

[2] *Principles and Practice of Medicine*, 4th edition, 1901, p. 808.

[3] Clifford Allbutt's *System of Medicine*, 1898, vol. v, p. 639.

[4] *Progressive Medicine*, 1903, vol. ii, p. 275.

1 to 2·5—might be described as extreme. Thus, Monro[1] mentions the average findings as 140,000 whites, with a ratio to the reds of 1 in 20; Cabot[2] gives an average of 59,000 white, with a ratio to the reds of 1 in 48—in one of Cabot's cases, however, the whites numbered 1,480,000, with a ratio to reds of 1 to 2; Osler[3] gives the average of whites as 144,800, and the average ratio as 1 to 16—a ratio of 1 to 10 Osler regards as extreme; Muir[4] declares that the ratio may be as high as 1 in 3 or even higher, and that the total number of leucocytes does not often reach 1,000,000.

Though chronic lymphæmia is most common in middle adult life, it is by no means unknown for it to develop in men at the age of my patient.

It is interesting to note that this man has suffered from two of the recognised remote causes of leukæmia, viz., malaria and syphilis: his syphilis, moreover, has been practically untreated. In view of the fact that Jonathan Hutchinson[5] quotes a case with twenty-two years' complete freedom from recognised symptoms as an illustration of the long latency of syphilis, it is worth while drawing attention to the fact that this man enjoyed a still longer period of latency, viz., thirty-five years.

Attention may be directed to the circumstance that this man has suffered from pain and tenderness over the sternum for several months. Though frequently mentioned by writers of "manuals" and "systems" of medicine, it is rare to come across these symptoms in reading reports of cases, and, according to Muir,[6] they would appear to be quite exceptional in this malady.

Though the glandular enlargement is considerable, pressure symptoms are almost absent, a fact that becomes quite explicable when we note that matting of the glands only exists in the axillæ, and even there but to a slight extent. The marked fluctuation in the size of the glands is quite in harmony with the descriptions of this disease. The duration—about two years—of such considerable and widespread glandular enlargement would, however, appear to be somewhat exceptional, since Muir[7] states that enlargement of the lymphatic glands, when at all marked, usually occurs either late in the disease or in cases which run a rapid course.

It seems to me a very remarkable fact that, with such a severe degree of anæmia, hæmic murmurs should be entirely absent.

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[1] *Manual of Medicine*, 1903, p. 312.

[2] *Loc. cit.*, p. 171.

[3] *Loc. cit.*

[4] *Loc. cit.*, p. 639.

[5] *Syphilis*, 1889, p. 316.

[6] *Loc. cit.*, p. 656.

[7] *Loc. cit.*, p. 633.

As regards the skin disease that this man has suffered from so frequently, it is difficult, not having seen it, to express an opinion. It may be that his own diagnosis of "erysipelas" is perfectly correct, or it may be that this skin affection is what Liveing[1] would call "spurious erysipelas." The suddenness with which it develops, and its intensely itchy and burning character are, however, very suggestive of an urticaria, and it corresponds somewhat closely to the "urticaria œdematosa" and "urticaria bullosa" as described by Crocker.[2] Crocker suggests that many cases termed "urticaria bullosa" are really "dermatitis herpetiformis," and it may be that such, or pemphigus, is the condition here. The eruption that occurs on the buttocks is herpes. I cannot find that leukæmic patients have any special tendency to diseases of the skin, so the pronounced liability on this man's part to suffer from skin affections must probably be regarded as accidental rather than dependent in any way upon the leukæmia itself; a view, moreover, which is supported by the fact that he suffered from these skin troubles for at least a year before his lymphatic glands became enlarged.

From 26th April to 2nd May he has been taking 15 m. of Fowler's solution per diem, and from 3rd to 9th May, 22·5 m. He undoubtedly feels better, and is not nearly so breathless since treatment was commenced, and the red corpuscles and hæmoglobin, so far, show a slight but steady increase. On the other hand, the white corpuscles have undergone a very considerable augmentation. At the present time, however, it is impossible to say how much these variations in reds and whites are due to the arsenic and how much to the fluctuations which are recognised to occur in this disease.

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[1] *Handbook of Skin Diseases*, 1887, p. 100.

[2] *Diseases of the Skin*, third edition, 1903, pp. 100, 101.

INTRAPERITONEAL HÆMORRHAGE AND HÆMATOCELE ARISING FROM TUBAL ABORTION OR RUPTURE, WITH RECORDS OF ILLUSTRATIVE CASES.[1]

BY G. BALFOUR MARSHALL, M.D., F.F.P.S.G.,

Gynæcologist, Royal Infirmary, Glasgow; Lecturer on Obstetrics and Gynæcology, Western Medical School, Glasgow.

A TIMELY recognition of the symptoms pointing to tubal abortion or the rupture of a tubal gestation sac, with resulting hæmorrhage into the peritoneal cavity, is a matter of great import. If the condition be not diagnosed in time, and the hæmorrhage continue unchecked, the patient will bleed to death within twenty hours, or it may be only several hours. In one of the cases referred to further on, the patient died within eight hours through rupture of a tubal gestation between the fourth and fifth week, the gravity of the symptoms not being recognised till too late. Should the hæmorrhage, however, be limited, and form a hæmatocele, as is fortunately oftener the case, failure to diagnose the condition is not of such immediate gravity to the patient. Still, even in these cases, an early diagnosis is of great importance, as successive hæmorrhages may occur, gradually exhausting the patient, or a further excessive hæmorrhage may prove rapidly fatal.

The diagnosis of intraperitoneal hæmorrhage is not unusually difficult if attention be paid to the symptoms and physical signs, yet many of these cases are apparently regarded as attacks of pelvic peritonitis, judging by the number of patients I have seen who have been poulticed, douched, and otherwise treated for inflammation. In regard to this matter, a reference will later on be made to the differential diagnosis from pelvic peritonitis, as well as to cases where I have made an erroneous diagnosis.

There are no symptoms typical of tubal gestation until hæmorrhage has taken place into or outside the tube, and, therefore, attention is in the vast majority of instances not called to the patient until metrorrhagia or tubal rupture or abortion has occurred.

In some cases the patient has the ordinary subjective signs of an early uterine pregnancy, and is unaware that anything is wrong until seized with sudden pain in the lower abdomen and symptoms pointing to hæmorrhage into or outside the tube.

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[1] Read at a meeting of the Glasgow Obstetrical and Gynæcologica Society held on 9th March, 1904.

Mrs. A., aged 37, after two months' amenorrhœa, was seized with sudden pain in the lower abdomen. During the succeeding four weeks she had continuous cramp-like pains in the lower abdomen, with irregular uterine hæmorrhage. A left tubal gestation was diagnosed, and, later, removed by operation. There had been hæmorrhage into the tube, which contained a six weeks' old embryo. Before I saw her, this patient had been treated by hot douches and tampons.

The usual symptoms in over a half of all cases of tubal gestation are irregular uterine hæmorrhages, with cramp-like pains in one or other iliac region, and these are all the more suspicious if the patient has been previously well.

Mrs. Y., aged 32, a week after a normal period, had uterine hæmorrhage lasting two days. She had other two hæmorrhages at intervals of five and seven days, also colicky pain in the right ovarian region. A right tubal gestation was diagnosed and removed. There had been hæmorrhage into the tube, forming a mole, and no embryo was found.

If the patient has been subject to long-standing pelvic pain following an attack of pelvic peritonitis, a tubal gestation might readily be overlooked till rupture or abortion occurred, as the following case shows:—

Mrs. W., aged 40, had suffered for several years with pain in the left side. Six weeks before I saw her she had a rigor followed by sweating, and severe pain in the left side, for which she had been poulticed. There was a large retro-uterine hæmatocele due to a ruptured tube.

As a rule, it is not difficult to diagnose tubal gestation before rupture or abortion have occurred if, with a recent history of cramp-like pains in the lower abdomen and irregular uterine hæmorrhage, there is found a dilated tube of a somewhat boggy consistency.

This paper is, however, mainly concerned with a discussion of the cause, symptoms, diagnosis, and treatment of intraperitoneal hæmorrhage arising from tubal abortion or rupture, and not with tubal gestation as a whole. Tubal abortion is much commoner than rupture, as Döderlein, out of 45 cases, found abortion in 41 and rupture in 4, or 10 to 1. Fehling gives 8 to 1; Martin, 4 to 1. Tubal abortion may, indeed, be commoner than is generally supposed, as, if it occur early with only slight intraperitoneal hæmorrhage, the symptoms may be ascribed to something else, and the patient recover without a tubal gestation having been suspected. I am led to this opinion by seeing cases which have been regarded as attacks of pelvic peritonitis from the local pain and tenderness on examination.

Cause of tubal abortion.—The glandless tubal mucosa hypertrophies but slightly, and does not form a decidua such as is found in the uterus, the placental site consisting only of fibrin, connective tissue, and ectodermal cells. The trophoblast and chorionic villi of the growing ovum readily perforate this thin layer, and open into the enlarged vessels in the tubal wall. This gives rise to hæmorrhage, which partially or completely separates the ovum, and the majority of tubal gestations thus end in the death of the embryo between the fourth and twelfth weeks. Through this hæmorrhage into the tube moles are formed. Should the ovum be fully separated, it may be forced through the fimbriated end of the tube into the peritoneal cavity, forming a complete tubal abortion, the bleeding then usually ceasing, although a large quantity of blood may be lost before this happens. More usually, however, the abortion is incomplete, the ovum being only partially separated. The bleeding therefore continues, and may prove fatal; but, if hæmorrhage be not too severe, a hæmatocele forms, its size depending on the amount of blood lost.

Cause of tubal rupture.—The tube may rupture spontaneously as the result of perforation of the wall by the growing villi, or from sudden distension by hæmorrhage into a tube already much thinned, and this is the more likely to happen if the gestation sac is near the uterus, as my cases have shown. In one case I examined microscopically, hæmorrhage into the tube wall had so broken up the tissue that only peritoneum covered a portion of the ovum. The gestation sac may also be ruptured by violence—*e.g.*, during a bimanual examination or during coitus, as in a case quoted further on.

Formation of hæmatocele.—According to Schroeder, a typical, tense, elastic hæmatocele is formed in one of two ways:—

(1) The pelvic cavity has previously been shut off from above by adhesions, so that the pouch of Douglas is roofed in to form a space. The effused blood escapes into this space, bulging down the posterior fornix, displacing the uterus forwards, and forming a typical retro-uterine hæmatocele.

(2) The following second view has been more generally accepted. A limited quantity of blood escapes into the

peritoneal cavity, and gravitates into the pouch of Douglas, where it clots, irritates the peritoneum, forms adhesions among the intestines above, and becomes encapsuled. It is only when further hæmorrhages occur into this new encapsuled space that a typical retro-uterine hæmatocele is formed. If the original quantity of blood has been sufficient to fill the pelvis and rise over the uterus, that organ is buried in the hæmatocele. An ante-uterine hæmatocele is formed when the uterus is displaced backwards and the blood collects in front. The blood usually clots, but in some instances it may remain fluid for weeks, as one of the recorded cases will show.

Döderlein differs from Schroeder's view. He holds that the effused blood collects in Douglas' pouch, clots, and, through organisation processes, forms adhesions with the surrounding parts and encapsules itself. Both size and form of the hæmatocele depend on the quantity of blood effused and the rate at which it escapes. The older the pregnancy the richer is the blood-supply to the gestation sac, so the more and the larger are the blood-spaces and vessels opened into. Thus the hæmorrhage is liable to be more profuse the more advanced the pregnancy.

Old hæmatoceles are enclosed in a tough fibrin capsule which they themselves have formed, and I have been able to strip them almost entire out of the pelvis like a cyst wall.

The peritubal hæmatoceles sometimes found at the side of the pelvis are formed by the repeated escape at intervals of small quantities of blood, each successive escape being added to the previous one beside the tube.

Symptoms of intraperitoneal hæmorrhage.—The patient is seized with sudden pain in the lower abdomen or iliac region, followed by faintness, collapse, and signs of internal hæmorrhage, such as anxious expression, pallor, clammy perspiration, and rapid weak pulse. If bleeding continue, the pulse gets weaker and more rapid, the temperature is persistently subnormal, there is sighing respiration, dimness of vision, ringing in the ears, and thirst. The patient may succumb from this hæmorrhage in a few hours, or in other cases she slightly rallies; but the bleeding recurs, and she dies, usually within twenty hours or so.

Should the hæmorrhage, however, be limited, and form a pelvic hæmatocele, which is fortunately oftener the case, the general condition does not become so alarming. There are sudden pain in lower abdomen, faintness, collapse, pallor, sweating, vomiting, and rapid pulse, then the patient gradually recovers. In a day or two there is a slight rise of temperature to 101° F. or perhaps 103° F., but this gradually subsides. There is pain over the lower abdomen, which may continue many weeks or months; while, owing to pressure on bladder and rectum, the patient complains of painful frequent micturition and painful defæcation, especially if the bowels be costive. If there be only a slight intraperitoneal hæmorrhage, the patient may just complain of pelvic pain, and it may be metrorrhagia, there being no faintness nor collapse, as the following case shows:—

Mrs. A., aged 33, thirteen years married, sterile. No previous pelvic symptoms. Metrorrhagia first showed itself, following immediately on a menstrual period, the menses being previously always normal. The uterine hæmorrhage continued, with an occasional day's intermission, for three weeks, when the patient was suddenly seized with pain in the left ovarian region. The pain got more severe till, on the third day after its onset, I was sent for. Bimanual examination showed the outer end of the left tube dilated and fixed in the left lateral pouch of Douglas, and very tender to pressure. At the operation two days later the pregnant tube was removed. A few drachms of blood had escaped from a small rupture.

The onset of intraperitoneal hæmorrhage may occur during a period of metrorrhagia or amenorrhœa. In the above case, the patient had been suffering from irregular uterine hæmorrhage for three weeks before the pregnant tube ruptured; in another, the hæmatocele had been present for four weeks before metrorrhagia set in, which lasted five weeks till operation was performed.

Diagnosis of free intraperitoneal hæmorrhage.—If called to a woman in the child-bearing period of life who has been suddenly seized with symptoms like the above, we should look for tubal pregnancy. If the bleeding continue, the collapse will get more profound and the temperature remain persistently subnormal. The abdomen may be somewhat tender to pressure, but may show no marked distension even although much blood has been lost. In such cases, however, there may be dulness to percussion in the flanks. Vaginal examination is negative, as effused blood lying free in the abdomen does not bulge the posterior fornix. Bimanually, an enlargement may be noted in the course of the tube.

Last year I read before the Society an account of a case of ruptured secondary abdominal gestation, where the patient nearly succumbed in a few hours from intraperitoneal hæmorrhage; indeed, she was almost pulseless when put on the operation table. The following is another example ending fatally:—

Mrs. A., aged 30, one child. After eight succeeding years of sterility she missed a period. Six weeks after the last menses she was, after coitus, suddenly seized with severe pain in the lower abdomen, and felt as if something had given way. Collapse quickly followed, and, on medical assistance arriving, the patient was already almost pulseless and vomiting. The abdomen was tender to pressure, but showed no marked distension. Death occurred within eight hours from the onset of pain. At the autopsy the abdomen was found full of blood, which had escaped from a small ruptured tubal gestation sac, measuring an inch by half an inch, lying close to to the uterus. Rupture had occurred between the fourth and fifth week.

Diagnosis of intraperitoneal hæmatocele, the effused blood being encysted.—Where the hæmorrhage has been large, a tumour mass may be felt projecting into the abdomen; but, as it is very tender to pressure in the early stages, abdominal examination may be unsatisfactory, although dulness to light percussion is easily elicited. I have found this abdominal tenderness present two and three months after the hæmatocele has been formed. Vaginal palpation shows a large, sensitive, rounded, fixed tumour, filling the pouch of Douglas, bulging down the posterior fornix, extending to the sides of the pelvis, and pushing the cervix close behind the symphysis pubis. The finger, placed in the rectum, passes behind the mass, and shows its rounded shape. Bimanually, we can map out the size of the hæmatocele, its irregularity above, and rounded shape below. It is quite immovable, has an elastic feel, and rarely fluctuates. In one case, a six weeks' old effusion was quite cystic and still very sensitive. The uterus is usually pushed well to the front, where it will be found close to the anterior abdominal wall; but in other cases it may be in or behind the hæmatocele, and cannot be felt.

If the tubal sac be sufficiently large and conveniently placed for palpation, it is sometimes possible to diagnose it by its different consistency from the hæmatocele. In one case it felt more cystic and less sensitive; in another, harder than the encysted blood mass. In another instance, what I took to be the gestation sac proved a pyosalpinx, complicating a hæmatocele from a ruptured tubal pregnancy of the opposite side.

If expectant treatment be adopted, it will be found that the mass becomes hard and irregularly nodular, while sensitiveness gradually abates. The blood is usually slowly absorbed, and takes many months to do so, the patient meantime being more or less of an invalid, suffering for months from pelvic pain, with bladder and bowel trouble. In the few cases I have followed to a conclusion, the uterus became densely adherent to the rectum and posterior pelvic wall. There is always the risk that the blood mass may become infected and suppurate, but I have never met with such a complication.

The following two cases have been selected as being typical examples of hæmatocele retro-uterina from tubal rupture and tubal abortion:—

1. *Case of tubal rupture; hæmatocele; operation.*—Mrs. R., aged 40, eight children; last confinement, twins, seven years ago. She had symptoms pointing to pelvic inflammation during the puerperium, and stated that she had never felt well since, suffering from pain in the left iliac region, aggravated before the periods. Her menses were regular, 28-day type, lasting six days. During the periods she had sacralgia and pain across the lower abdomen. Six weeks before admission to hospital she was seized with sudden severe pain in the left iliac region, followed by a rigor and sweating. The pain soon became general over the whole lower abdomen, which was very tender, and for which, she stated, she had been poulticed, with some relief. During the succeeding six weeks she perspired freely, had a poor appetite, felt very thirsty, and frequently vomited after food. The bowels were costive, and when they moved caused great pain in the pelvis. She had a constant desire to micturate, and complained of scalding when passing urine. Latterly she had felt pain shooting round to the back and down the left leg.

Examination showed great tenderness over the whole lower abdomen and dulness to percussion. The whole pelvis was filled by a large retro-uterine hæmatocele, which felt quite cystic, bulged into the posterior fornix, and pushed the uterus upwards and forwards against the anterior abdominal wall, the cervix being high up and lying just behind the symphysis pubis. Above and a little to the left of the fundus uteri was a hard, slightly movable, pear-shaped mass, which proved to be the gestation sac.

On opening the abdomen, the omentum, the lower border of which contained a walnut-sized hæmatoma, was found adherent to the hæmatocele. The lower 2 inches of omentum, including its hæmatoma, were removed. The intestines were densely adherent, to form a roof over the hæmatocele, but were separated without injury. The vermiform appendix was firmly adherent to the uterus, but, as it looked quite healthy, was simply separated and left. The hæmatocele consisted of fluid blood, mixed with some small clots, which was completely removed. The left tubal gestation sac, which was removed, lay close to the uterus, had ruptured posteriorly, and was filled with hard blood-clot, forming a tubal mole. No trace of an embryo could be found. The patient was discharged from hospital cured three weeks after operation.

2. *Case of incomplete tubal abortion; hæmatocele; operation.*—Mrs. S., aged 26, one child six years ago. Menses regular 28-day type, lasting four days. She had always enjoyed excellent health. Eight days after a normal period, and nine weeks before admission to hospital, she was suddenly seized, while walking across her room, with severe cramp-like pain in the left iliac region and across the lower abdomen, with a feeling of weakness and nausea, but no vomiting. The pain and weakness continued, confining her more or less to bed, and she had dysuria. She was treated by poultices and morphia suppositories, which gave some relief. Four weeks later she had a copious uterine hæmorrhage, mixed with "stringy" pieces, which lasted nine days, when it became scanty, but persisted for five weeks till date of operation. She stated that, after the profuse uterine hæmorrhage stopped, her doctor swabbed out the uterus with carbolic acid, and on the following day a nurse douched her. After this the pain was general over the lower abdomen, but worse on the left side, and she was unable to get out of bed till sent to hospital.

Examination.—The mammæ contain a colostrum-like secretion. A hard fixed tumour mass extends across the whole lower abdomen, slightly tender to pressure on the right, more tender on the left. The upper margin on right side is 1 inch above anterior superior spine, and it slopes downwards to the middle of Poupart's ligament on the left. The uterus is distinctly palpable in front just to the right of the middle line. Bimanual examination shows the uterus pushed upwards and forwards against the anterior abdominal wall, and the whole pelvis filled with a tense, elastic, sensitive hæmatocele retro-uterina. A portion on the right side, which I take to be the gestation sac, feels more cystic and less tender than the greater mass to the left.

Operation.—On opening the abdomen, omentum, small intestine, and sigmoid were found firmly adherent to the hæmatocele, and so dense were some of the adhesions that portions of the blood-sac had to be left attached to the bowel. The blot-clot was first removed, after which the blood-sac and right tubal sac were taken out entire. There was, in addition, a small pyosalpinx on the left side, which was also removed. I wondered if swabbing the uterus could have caused this pyosalpinx, as the patient had previously been quite free from pelvic symptoms. A portion of the right ovary was left behind to prevent an artificial menopause in so young a woman. The left ovary had to be excised, as it was cystic. The patient was dismissed cured in three weeks. An examination of the right tube after removal showed that it was a case of incomplete tubal abortion, the gestation sac being in the outer half of the tube. The ostium was dilated, and projected well into the hæmatocele sac.

Differential Diagnosis.

1. *From peritonitis arising from sudden escape of pus into the peritoneal cavity, as from rupture of a pyosalpinx, ovarian abscess, or suppurating cystoma.*

It has already been stated that many of these hæmatoceles are treated as if they had been regarded as cases of pelvic peritonitis. In both there is sudden pain and collapse, but in acute peritonitis from sudden escape of pus the pain is intense, there is a marked and rapid onset of peritoneal inflammation, while the temperature at once begins to rise rapidly, as the following case shows:—

Miss A., aged 19, had complained of pain in the left side for five months. One day at 2·30 P.M. she had a rigor, immediately followed by most intense pain in the left iliac region and collapse. At 5 P.M. the temperature had risen to 105·6° F., the pulse to 144. The abdomen was exceedingly tender and rigid. When I operated at 6·30 the peritoneum was found deeply injected, and there was a considerable quantity of reddish peritonitic fluid in the pelvis. A suppurating ovarian cystoma had ruptured, allowing a small quantity of thin pus to escape.

In pelvic peritonitis a tumour does not form, and, when exudation occurs, the vaginal vault is firm and board-like, with the cervix uteri firmly fixed in the middle of the pelvis. The abdomen is rigid, very painful, and exceedingly tender to pressure over its lower half. These symptoms may be compared with those already given for hæmatocele.

2. *Two cases simulating hæmatocele, and mistaken for such.*

(*a*) *Double pyosalpinx.*—Mrs. A. had had symptoms pointing to possible pelvic mischief several years ago, since when she had been sterile. For the past five years, however, she had enjoyed perfect health, being quite free from pelvic symptoms. The menses were regular and painless. A few days before I saw her she had, shortly after a normal menstrual period, a sudden attack of pain in the lower abdomen, followed by uterine hæmorrhage. The uterus was displaced forwards by a tense, elastic, very sensitive, fixed tumour mass, which bulged down into the posterior fornix, and extended to both sides of the pelvis. Dr. Kelly confirmed my diagnosis of hæmatocele arising from tubal gestation, but at the operation a large double pyosalpinx was found. Both tubes were much distended, and filled the posterior half of the pelvis, pushing the uterus well to the front. The tubes were also firmly adherent to each other in the bottom of the pouch of Douglas, and were immovably fixed to the pelvic floor. There had, no doubt, been a fresh infection of an old double pyosalpinx, which for at least five years had been quiescent and given no trouble.

(*b*) *Double ovarian cyst.*—Mrs. M., aged 28, one child. Six weeks ago, after three months' amenorrhœa, she had severe pain in the lower abdomen, followed by vomiting and onset of uterine hæmorrhage. She thought it was an abortion, as a "lump" came away. Since then there had been irregular uterine hæmorrhage, pain in the lower abdomen, and dysuria. I found the uterus displaced to the front by a fixed tumour mass, sensitive to pressure, hard on the right, semi-cystic on the left. I took the hard portion for a tubal gestation sac, the softer portion for the hæmatocele, and considered the alleged abortion, with "something coming away," as the throwing off of a decidua. Operation showed a cystoma of each ovary. Both cysts were firmly fixed by dense adhesions to the floor and walls of the pelvis and to each other. The patient could not have had an abortion, as both ovaries were incapable of producing ova. The supposed abortion was no doubt simply blood-clot.

Treatment.—It is now generally accepted that an ectopic pregnancy, as soon as it is diagnosed, should be promptly removed, since the risks of operation are small compared with the dangers of leaving it. There is, however, a difference of opinion as to whether expectant or operative treatment should be adopted when an encysted hæmatocele has formed. Each case should be judged on its merits, depending on whether it is seen at once or later, or whether the blood-effusion is large or small. The patient is also frequently not seen by the gynæcologist for weeks, or even months, after the formation of the hæmatocele. If seen at the onset of the first symptoms of intraperitoneal bleeding, and these symptoms are always severe enough to demand medical assistance being sent for, operation should be performed as soon as possible on the general principle that, given a bleeding point, the hæmorrhage should be arrested. Moreover, we cannot expect all cases to end in the formation of a hæmatocele. Although it is true that, as a general rule, the most alarming hæmorrhage occurs when rupture or abortion takes place from, say, the eighth to the twelfth week; yet, as has been shown by one of the cases reported, a patient may rapidly bleed to death from a small gestation sac, so that operation is just as imperative in early as well as older tubal pregnancies.

It is possible, however, that a patient might be in some remote district where an immediate operation could not be performed, or the practitioner preferred not to risk it, but to trust to expectant treatment. It would be better for him, however, if he can get assistance, to risk operation rather than let the patient bleed to death if there are no signs of rallying. Should the more favourable hæmatocele form, as shown by the patient rallying and not getting worse, expectant treatment may well be adopted till operation is possible, if thought advisable.

If the hæmatocele is a large one, it should be operated on, whether seen recently or some weeks later, as to leave such a patient to nature's cure is to condemn her to a very prolonged period of invalidism, with the formation of dense adhesions, not to speak of the risk of such a large blood-mass becoming infected and suppurating.

Herman[1] "thinks that a pelvic hæmatocele is best treated in the first instance by expectant treatment," and "if in a fortnight it is not smaller, or has got larger, then the question of operation must be considered." Previous to this statement, he says that, "when I have advised expectant treatment, I have usually told the patient that she would be an invalid at least three months." Being an invalid for three months is to understate the time in many cases. Contrary to the experience of others, I have always found absorption exceedingly slow in large hæmatoceles, and even after three months it may still be very large, and the patient suffering much pain and discomfort, as the following case shows:—

Mrs. C., aged 28, three children, last two years ago. Menses regular, 28-day type, lasting three days, with premenstrual pain for one day. Several days after a normal menstrual period she was seized, while lying quietly in bed, with sudden pain in the lower abdomen. Uterine hæmorrhage began at the same time, and continued for two months, then stopped for two weeks and returned again. For three months she suffered from pelvic pain and the usual other discomforts of hæmatocele. For the first four weeks she was confined to bed, and told she had inflammation of the bowels, for which she was poulticed. The patient still had, three months after onset, a large hæmatocele, and the diagnostic signs were as in any typical case. I diagnosed a thickening in the left tube as the gestation sac, but operation proved this to be a pyosalpinx. The ruptured gestation sac lay in the right tube.

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[1] *British Medical Journal*, 9th January, 1904.

What operation should be adopted? Should the blood be evacuated by vaginal incision or an abdominal section performed? I do not favour vaginal section. Merely to evacuate the blood-clot is not much better than expectant treatment, as the tubal mole and fibrinous hæmatocele sac are left behind. It would be exceedingly risky to attempt to remove the tube *per vaginam* owing to the numerous adhesions that are always found; and, further, as two of the recorded cases show a pyosalpinx existed as well, while in another the vermiform appendix was firmly adherent to the uterus.

If an operation is performed at all, it should be by abdominal section, as the field is fully exposed and better inspected, while the various viscera can be freed from adhesions. The affected tube or tubes, all blood-clots, and as much as possible of the fibrinous sac should be removed. The pelvic cavity should be flushed clean by sterilised saline solution, and should drainage, which will rarely be called for, be necessary, it is best carried out by gauze passed through an opening in the posterior fornix into the vagina, so as to enable the abdominal wound to be completely closed.

If the patient is not seen for some time after internal hæmorrhage has occurred, and the hæmatocele as well as the gestation sac are small, then expectant treatment may be adopted, especially if the symptoms are slight. Recent cases of this character should, however, be carefully watched, if it is decided to wait, as a further intra-abdominal hæmorrhage may occur.

Expectant treatment, if adopted from the beginning, consists in an endeavour to check hæmorrhage by absolute rest in bed, ice-bags to the abdomen, morphia and ergot injections. Later, the local peritonitis must be treated, and attention paid to the bowels to ensure pultaceous stools. Still later, absorption is promoted by hot douches and glycerine ichthyol tampons.

Personally, I have only left a hæmatocele to absorb in a few cases where the effusion was small and not seen for some weeks after the date of onset.

In closing this discussion, I trust to elicit the opinion of the Fellows on the question of expectant *versus* operative treatment, and to hear of cases where they have experienced difficulty in making an accurate diagnosis owing either to an imperfect or deceptive history or to some pelvic condition closely simulating tubal gestation.

I have not referred to cases of pyosalpinx simulating in their history tubal gestation before rupture or abortion have occurred, as being outwith the scope of this paper.

Obituary.

ARCHIBALD BROWN, M.D.

By the death of Dr. Archibald Brown, of Mount Florida, which took place at Gourock on 23rd June, the medical profession in Glasgow has lost one of its most respected members.

Born in Greenock somewhat over fifty years ago, Dr. Brown received his early training there. He took his medical curriculum in the University of Glasgow, where he was one of the most distinguished students of his year. After his graduation in 1875, he spent a year as resident assistant in the Western Infirmary, completing his training by a period of residence in the Rotunda Hospital, Dublin.

Shortly after his return from Dublin, Dr. Brown commenced practice in Mount Florida, then a comparatively new and small suburb of the city. In the years that have since elapsed, he built up for himself a very large practice. Though well qualified for hospital work, he never sought to attain any hospital connection, recognising the fact that a busy practitioner could not do justice to both private and hospital practice. Nor did he show himself much at any of the medical societies, so that his marked abilities were probably less known to members of the profession than they might have been.

Dr. Brown was a man of an exceedingly good type. Throughout his later life he continued the studious habits of his earlier days, so that he was well acquainted with medical literature. Naturally of a thoughtful temperament, he spent much time and consideration on his cases, and was recognised by all who met him professionally as one of our most highly trained and able practitioners.

He had a genuine love for literature, and was a well read man, his books being selected with great care. Personally, he was one of the most modest of men, absolutely straightforward, and with a high sense of duty.

Rather more than two years ago, Dr. Brown was seized with a painful abdominal affection, which has cut him off in the prime of his usefulness. Many will miss in him a valued friend and a trusted adviser.

CURRENT TOPICS.

University of Glasgow: Graduation in Medicine.—The summer graduation ceremony took place in the Bute Hall on Tuesday, 19th July, the Very Rev. Principal Story presiding. After the ceremony, Professor M'Call Anderson delivered the usual address to the graduates. The following is the list of those who obtained degrees:—

DOCTORS OF MEDICINE (M.D.)

I.—With Commendation.

Ernest Alexander Walker, M.A., M.B., C.M., Scotland. *Thesis*—"Ten Successive Laparotomies: their History, Clinical Aspects, and Technique."

II.—Ordinary Degree.

John James Boyd, M.B., C.M., Scotland. *Thesis*—"Scarlet Fever from the Preventive Medicine Standpoint, with special reference to the position of Hospital Isolation in controlling its spread."

Alexander Girvan, M.B., C.M., Scotland. *Thesis*—"Acute Eczema in Adults and Children."

James M'Glashan, M.B., C.M., Scotland. *Thesis*—An Occupational Disease."

BACHELORS OF MEDICINE AND MASTERS IN SURGERY (M.B., C.M.)

Stewart Dunbar, Scotland.
Ernest Milton Watkins, Wales.

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY (M.B., Ch.B.)

I.—Honours.

[1] Robert Buchanan Carslaw, M.A., Scotland.
George Munn Gray, ,,

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[1] Mr. Carslaw gains the Brunton Memorial Prize of Ten Pounds, awarded to the most distinguished Graduate in Medicine of the year.

II.—COMMENDATION.

James White Thomson,	Scotland.
William Templeton,	,,
Hugh Harvey Fulton,	,,
John Duncan M'Callum, M.A.,	,,
Tom Duncan M'Ewan,	,,
Robert M'Nair Wilson,	,,
George Goldie Smith, B.Sc.,	,,
Andrew Maclean Pollock,	,,
Berkeley Hope Robertson, M.A., B.Sc.,	,,
Donald Ronald Reid,	,,
John Murdoch,	,,

III.—ORDINARY DEGREES.

Bethia Shanks Alexander,	Scotland.
Archibald Craig Amy,	,,
Henry Græme Anderson,	,,
James Richard Sunnor Anderson,	Scotland.
Robert Daniels Bell, M.A.,	England.
David Blackley,	Scotland.
Charles Brown,	,,
George Yuille Caldwell,	,,
Roberta Campbell,	,,
Thomas Murdoch Campbell, M.A.,	Scotland.
Peter Carrick, M.A.,	,,
James Alexander Cowie, B.A., B.Sc.,	New Zealand.
Thomas Thornton Macklin Dishington,	Scotland.
Charles Milligan Drew, M.A.,	,,
John Graham, B.Sc.,	,,
John Cochrane Henderson,	,,
James Rutherford Kerr,	,,
John Kerr,	England.
Ethel MacLeod Lochhead,	Scotland.
Peter Lowe, M.A., B.Sc.,	,,
Thomas Symington Macaulay,	,,
Donald Carmichael M'Cormick,	,,
Neil M'Dougall,	,,
James Boston M'Ewan,	,,
Duncan Macfadyen,	,,
John M'Farlane,	,,
Alexander Stewart Murray Macgregor,	Scotland.
James M'Houl,	,,
Ronald Mackinnon,	,,
Andrew Brown M'Pherson,	,,
James Roy M'Vail,	,,
James Marshall,	England.
Andrew Meek,	Scotland.
Margaret Walker Millar,	,,
David Robertson Mitchell,	England.
John Muir,	Scotland.
Alexander Harper Napier,	,,
George Clement Nielson,	,,
Thomas Orr,	,,
Charlotte Reid Park,	,,
Howard Henderson Patrick,	,,
John Clegg Pickup,	England.
James Porter,	Scotland.
William Murdoch Rae,	,,
William Rankin, M.A.,	Portugal.
Lawrence Drew Shaw,	Scotland.
Jessie Marie Stewart,	New South Wales.
William Craig Stewart,	Scotland.
Murray Ross Taylor,	,,
William Young Turner, M.A.,	,,
Hugh Fleming Warwick,	Ireland.
Annie May Yates,	,,
Hugh Young,	Scotland.

UNIVERSITY OF GLASGOW—The following have passed the fourth (final) professional examination:—

A.—FOR M.B., C.M.

Stewart Dunbar.
Ernest Milton Watkins.

B.—FOR M.B., CH.B.

Bethia Shanks Alexander.
Archibald Craig Amy.
Henry Græme Anderson.
James Richard Sunner Anderson.
Robert Daniels Bell, M.A.
David Blackley.
Forrest Brechin.
Charles Brown.

George Yuille Caldwell.
Roberta Campbell.
Thomas Murdoch Campbell, M.A.
Peter Carrick, M.A.
Robert Buchanan Carslaw, M.A.
James Alexander Cowie, B.A., B.Sc.
Thomas Thornton Macklin Dishington
Charles Milligan Drew, M.A.
Hugh Harvey Fulton.
John Graham, B.Sc.
George Munn Gray.
John Cochrane Henderson.
James Rutherford Kerr.
John Kerr.
Ethel MacLeod Lochhead.
Peter Lowe, M.A., B.Sc.
Thomas Symington Macaulay.
John Duncan M'Callum, M.A.
Donald Carmichael M'Cormick.
Neil M'Dougall.
James Boston M'Ewan.
Tom Duncan M'Ewan.
Duncan Macfadyen.
John M'Farlane.
Alexander Stuart Murray Macgregor.
James M'Houl.
Ronald Mackinnon.
Andrew Brown M'Pherson.
James Roy M'Vail.
James Marshall.
Andrew Meek.
Margaret Walker Millar.
David Robertson Mitchell.
John Muir.
John Murdoch.
Alexander Harper Napier.
George Clement Nielson.
Thomas Orr.
Charlotte Reid Park.
Howard Henderson Patrick.
John Clegg Pickup.
Andrew Maclean Pollock.
James Porter.
William Murdoch Rae.
William Rankin, M.A.
Donald Ronald Reid.
Berkeley Hope Robertson, M.A., B.Sc.
Lawrence Drew Shaw.
George Goldie Smith, B.Sc.
Jessie Marie Stewart.
William Craig Stewart.
Murray Ross Taylor.
William Templeton.
James White Thomson.
William Young Turner, M.A.
Hugh Fleming Warwick.
Robert M'Nair Wilson.
Annie May Yates.
Hugh Young.

The following candidates passed with distinction in the subjects indicated:—

In (a) *Surgery and Clinical Surgery*, (b) *Practice of Medicine and Clinical Medicine*—Thomas Orr. *In* (a) *Practice of Medicine and Clinical Medicine*, (b) *Midwifery*—Robert Buchanan Carslaw, M.A. *In Surgery and Clinical Surgery*—Margaret Hardy, Arthur Innes, Ethel MacLeod Lochhead, John Duncan M'Callum, M.A.; George Goldie Smith, B.Sc.; Robert M'Nair Wilson. *In Practice of Medicine and Clinical Medicine*—Robert Daniels Bell, M.A.; David Blackley, Hugh Harvey Fulton, Tom Duncan M'Ewan, John Murdoch, Andrew Maclean Pollock, William Rankin, M.A.; Donald Ronald Reid, William Templeton, William Young Turner, M.A. *In Midwifery*—Forrest Brechin, Peter Carrick, M.A.; Louis Leisler Greig, Margaret Walker Millar, David Robertson Mitchell, Howard Henderson Patrick, David Penman, William Craig Stewart, John Unsworth.

NEW PREPARATIONS, &c.

Tabloid Calomel and Sodium Bicarbonate; Tabloid Grey Powder and Sodium Bicarbonate (London: Burroughs Wellcome & Co.).—The accurate dosage ensured by the use of tabloid preparations is a manifest advantage in the case of mercurials. The above two tabloids are available in the strength of half a grain of the mercurial with 2½ grains of the sodium salt, or with double the quantity of each ingredient.

CALCIUM GLYCEROPHOSPHATE; SODIUM GLYCEROPHOSPHATE; IRON GLYCEROPHOSPHATE (London: Burroughs Wellcome & Co.).—The issuing of these salts separately in dry form renders the practitioner independent, if he chooses so to be, of the exact proportions in which some of the principal ingredients occur in the compound syrup of the glycerophosphates. The dose of the above preparations varies from 2 to 5 grains. The salts are supplied in bottles of 1 oz. and 4 oz.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1903-1904.

MEETING VII.—22ND JANUARY, 1904.

The President, DR. DAVID NEWMAN, *in the Chair.*

DEMONSTRATION ON ELECTRO-THERAPEUTICS.

BY DR. JOHN MACINTYRE.

Dr. Macintyre's paper appeared in full in the *British Medical Journal* for 23rd April, 1904, pp. 933-940.

MEETING VIII.—5TH FEBRUARY, 1904.

The President, DR. DAVID NEWMAN, *in the Chair.*

I.—THREE CASES OF OCULAR PARALYSIS.

BY DR. H. WRIGHT THOMSON.

Dr. Thomson's paper will be found as an original article in our issue for April, 1904, at p. 276.

II.—THE SURGICAL TREATMENT OF ACUTE APPENDICITIS.

By Dr. J. Crawford Renton.

Dr. Renton urged operation after one acute attack, more especially in patients under 45, and very specially in young people. Where the symptoms were very severe on the first day of an acute attack, he thought it was often better to remove the appendix at once and thus save any adhesions. In many cases the doctor is not called until the third day of the attack, and at that stage in ordinary cases it is unwise to interfere; but the patient should be kept under the medical man's care until all tenderness has subsided, and, as part of the treatment, the appendix ought to be removed. This saves any second attack, and, as the mortality of the operation is only 1 per cent, it seems right that this should be done, unless there are any indications against it. In cases of suppurative appendicitis, the abscess must be opened in the ordinary way, and in cases of burst or gangrenous appendix the sooner operation is carried out the better for the patient.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

Session 1903-1904.

Meeting VII.—11th April, 1904.

The President, Mr. A. E. Maylard, *in the Chair.*

I.—FRESH SPECIMEN.

Shown by Dr. G. B. Buchanan.

Portion of ileum with Meckel's diverticulum.—A lad, about 18 years of age, took ill with severe pain in the abdomen on Friday morning on being wakened to go to his work. He had had no illness before; no gastric or intestinal troubles. His doctor saw him that morning. Pulse good; no rigidity of abdominal muscles, only colic pain. His mother had given him castor oil, and the doctor ordered him a large enema, which had the result of evacuating the bowel very freely. Patient rather better in evening, but still pain intermittently.

Doctor saw him on Friday night and Saturday morning. Patient still had great pain, and was sent to the infirmary.

On admission (about midday).—Great rigidity of abdominal muscles, severe pain all across abdomen, a little vomiting, liver dulness present. Leucocytes, 20,000 (5,000 lymphocytes).

Operation.—Abdomen opened in right iliac region. Appendix, congested like rest of bowels, removed. Some clearish fluid in peritoneal cavity. A constriction of the small intestine, lying deeply in abdomen, and apparently attached to near brim of pelvis, was found, and a narrow band of tissue across it was divided. Bowel now seemed free, and as point of constriction was not gangrenous, the abdomen was closed. Patient had a fairly good night, but on Sunday forenoon had more pain. A small quantity of fæcal matter came away with an enema, and it was thought that patient had passed flatus. In evening patient complained of more pain, very severe; vomiting recommenced; leucocytes, 20,000; liver dulness absent; great distension of bowels.

Operation.—Abdomen opened in middle line, the same point of constriction found after searching, and a Meckel's diverticulum twisted on itself and dragging on and constricting the lumen of bowel completely. Resection and union by Murphy's button; patient weak; saline, adrenalin, strychnine; death after eight hours.

II.—DEMONSTRATION OF A NUMBER OF CASES OF RODENT ULCER, ETC., TREATED BY *X*-RAYS.

By Dr. Jas. R. Riddell.

There were fourteen cases; six of these were previously shown to the Society (in February, 1903). Of the cases shown on that occasion, one had disappeared, and another had passed into other hands, the cure still incomplete.

Four out of the six old patients now present had remained well; one of the other two had been on treatment intermittently since last shown, and the cure was completed; the sixth stopped treatment before complete recovery, but he remained almost well, and was about to resume treatment.

Eight cases were shown for the first time. Six of these Dr. Riddell regarded as rodent ulcers. A seventh was probably rodent, although it might be epithelioma. The last case he was inclined to regard as epithelioma. The tumour was situated on the upper lip, close to the middle line, at the junction of the skin and mucous membrane. It was about the size of a split pea; he did not feel justified in advising the removal of a portion of it for microscopic examination.

All the cases had been treated with x-rays alone, with the exception of one, which had also had several courses of treatment by high-frequency currents.

Photographs of the new cases were shown for purposes of comparison. Dr. Riddell called attention particularly to the normal appearance of the new skin over the site of the ulcers.

In two cases, it was practically impossible to find the spot where the ulcer had been.

III.—NOTES OF EXPERIMENTS TO DETERMINE THE RELATIVE EFFICIENCY OF SOME SURGICAL DRESSING MATERIALS.

By Dr. A. N. M'Gregor and Dr. Robt. Ramsey.

The desirability of some such experiments was indicated by the common experience in surgical practice, that the gauze drains failed to act satisfactorily, as shown by the gush of discharge which so frequently follows removal of the drain. The first series of experiments demonstrated the amount of water absorbed by each sample of material, and, to some extent, the rate of absorption. The weight of each piece was taken dry, saturated, and with the excess squeezed out, and the results showed that absorbent wool and cellulose absorbed most water, boracic lint and gauze (plain) being next in absorptive power.

The second series was devised for the purpose of determining the rate of conveyance of fluids through a distance of three inches of material of approximately the same bulk and shape. This test showed that the capillary action of cellulose (Tillman's paper dressing) was quickest, boracic lint and plain gauze next, and that some samples of iodoform gauze refused to attract the moisture at all. The third series consisted of experiments with a fixed quantity of pus, into which the material to be tested was led through a glass tube. In this case, too, the cellulose acted most quickly, but the boracic lint remained efficient for a longer time, all other materials being much lower.

It was demonstrated, *inter alia*, that no drain would act efficiently for a longer period than four hours, that moist packing was ineffective, and that the drainage results were markedly enhanced when the covering material was of equal or greater capillary attractive power than the drainage material.

The following practical suggestions were made:—(*a*) That boracic lint is the best drainage material, and that all gauzes, especially iodoform gauze, should be periodically tested; (*b*) that cellulose (or Tillman's paper dressing) is the best covering material, as it conveys the discharge to a greater distance from the point of contact with the drain than any other material; and (*c*) that where a cavity cannot be drained by gravity, the capillary drain, to be effective, should be changed very frequently, as the meshes of the material soon become choked with the solid ingredients of the discharge. A number of experiments were shown at the meeting, and tables giving the results with fifteen varieties of material were exhibited.

IV.—TWO RECENT CASES OF CRICO-THYROTOMY FOR THE REMOVAL OF INTRA-LARYNGEAL NEW GROWTHS.

By Dr. Walker Downie.

Case I.—Mrs. O. was admitted to Ward XXVI on 20th March, 1904, complaining of difficulty and pain on swallowing, and husky aphonia.

History.—Patient had been seen by Dr. Walker Downie on 15th January at the Out-door Department of the Western Infirmary, when she stated that, two and a half months previously, she had swallowed a fish bone. She had been examined by her own doctor at the time, who found no trace of any foreign body. From this time onwards, she had trouble with her throat. There was constantly some discomfort, often severe pain, especially over the right side of the thyroid cartilage, and there had been a gradually increasing difficulty in both speaking and in swallowing.

During the past two months, there had been a serious loss in weight. There was no evidence of syphilis in her history; her pregnancies were normal; her children healthy, &c.; and her doctor, who had known her for a lengthened period, felt sure syphilis should be excluded from the list of probable causes of the laryngeal condition.

On admission to the ward it was found, on larnygoscopic examination, that the left vocal cord and the left ventricular band were both greatly swollen and deeply injected, and that the left arytenoid and aryepiglottic fold were œdematous. There was a quantity of muco-pus lying in and around the larynx. She had a persistent depressing cough, with noisy stridulous breathing.

During her first night in hospital, she was much disturbed by the cough and by attacks of dyspnœa. A mixture of iodine and bromide of potassium was prescribed, along with a soothing steam inhalation.

Her condition appeared to improve, so that on 6th February it was noted in the Journal that her general condition was improved, food was being taken more easily, and the breathlessness was almost gone, though the troublesome cough was still present. There had been a little more pain in the larynx, and there had been on one occasion a streak of blood in the sputum. Within a few days of this note, respiratory difficulties increased, and to such an extent that on 11th February tracheotomy was performed. On the following day, the patient expressed feelings of great comfort, but there was still some pain on the right side of the larynx, and there was a large quantity of mucus discharged through the tube.

A week later (17th February), the larynx was opened by an extension upwards of the tracheotomy incision through the first ring of the trachea, and through the cricoid and thyroid cartilages. The larynx at the level of the vocal cords—the glottis—was found to be nearly closed by great thickening of the sub-mucous tissues, in which was incorporated the cords and the ventricular bands, rather than by distinct tumour formation. This hypertrophied tissue was removed as far as possible, with the perichondrium, by means of scissors and periosteal elevator. After a complete clearance had been effected, the cavity of the larynx was packed with iodoform gauze and the wound closed with silkworm-gut stitches. The tracheotomy tube was then placed in the original tracheotomy wound. Two days later, the larynx was re-opened, the gauze packing removed, and some tags of tissue clipped away. The larynx was again packed, and the wound again closed.

On the 22nd, the packing was again removed and not replaced, after which the wound in the neck was closed throughout.

Five days later, the wound in the neck was practically healed, and the patient felt much stronger, could swallow freely, though this act was still accompanied by a variable degree of pain.

On 7th March, the patient returned home. The interior of the larynx was healed, the patient could breathe easily and speak well, though huskily, and there was freedom from pain.

A month later, while her general health was good and the pain in abeyance, she complained of severe attacks of coughing, which at night were accompanied with fits of choking, relieved after a time by the expulsion of mucus.

Pathological report by Dr. A. R. Ferguson.—Several fragments of tissue were submitted for microscopical examination. These consisted of rounded masses of fairly firm elastic consistence. Microscopically examined, they were found to be composed of somewhat highly cellular granulation tissue, covered by several layers of cylindrical epithelium. In some parts, the tissue had become distinctly fibrous in character, and showed evidences of progressive contraction; in other places, however, there were numerous recently-formed blood-vessels, between which were large numbers of lymphocytes and fibroblasts—the former being in large numbers.

There were no foci of necrosis in the tissue; at one part, however, where there had been superficial ulceration, the subjacent tissue was over-run by large numbers of polymorphonuclear leucocytes. Dense collections of lymphocytes occurred scattered throughout the sections; these were rather numerous immediately underneath the epithelial layer, and also in the deeper parts.

Many of the fibres of voluntary muscle encountered in the depth of the tissue had lost their characteristic striation, and appeared swollen; others, however, were quite healthy in appearance, the condition of the muscle evidently being determined by the degree of involvement in the fibrotic process.

Culture experiments and careful search for bacteria in the tissue met with negative results.

The histological appearances, it is seen, are those of a chronic hyperplastic fibrosis of progressive character. The idea of rhinoscleroma was considered and set aside.

Case II.—W. R., aged 69, was sent to me in July, 1902, on account of huskiness, but, as I was from home on holiday, he was seen by another laryngologist, who discovered a small intra-laryngeal tumour in connection with the left vocal cord, and which he diagnosed as carcinomatous. He advised against operation, and prescribed iodide of potassium. At the end of six months, no improvement could be observed, and the patient was then recommended to try the effect of *x*-rays upon the tumour, but the patient was averse to trying the experiment, and nothing further was done. He continued to attend to his duties as a schoolmaster—was at his school every day—his health remained good, there was no appreciable loss of weight, and his only complaint was persistent huskiness, with breathlessness on exertion.

During all that time, his own doctor had examined the larynx regularly, and had noticed but slight increase until January, 1904. He then observed a distinct increase in its size, that it had become more rugged and irregular on the surface, "as though the tumour had penetrated through its enclosing capsule," and he was then referred to me. I saw him on 30th January, 1904, for the first time, when he spoke in husky whispers, and had very evident dyspnœa. On examinination, I found a slight swelling of the right ventricular band, most marked anteriorly, where it overlapped the right vocal cord.

The left half of the interior of the larynx was occupied by a new growth. It appeared as if it sprang from the left ventricle, and in the process of its growth it had incorporated the left ventricular band and the vocal cord. The greater part of its upper surface was smooth, being, in fact, the covering ventricular band, red and swollen; but nearer the middle line the tumour tissue proper was seen, and it had an irregular warty-like surface. This tumour, with the surrounding incorporated structures, remained unmoved during respiration and phonation; and, on account of its size, the rima glottidis was seriously encroached upon.

No involvement of lymphatics could be detected. It was thought that by laryngotomy the tumour might be removed, and until this was arranged the patient was put on iodide of potassium with arsenic.

I saw the patient a second time in February, and for a third time on 7th March, when, as there had been a steady increase in the respiratory difficulty, he was taken into a "Home" where, on 10th March, tracheotomy was performed. On the 15th, the interior of the larynx was fully exposed by the division of the cricoid and thyroid cartilages throughout their length—complete laryngo-fissure—and the new growth, along with the left ventricular band and left vocal cord, were removed, taking the perichondrium with it as far as possible.

The interior of the larynx was then firmly packed with gauze, the wound closed, and the tracheotomy tube re-inserted.

The packing was withdrawn on the third day, and the tracheal tube on the fifth day, after the performance of crico-thyrotomy.

The patient left the home on 28th March, breathing without difficulty, with a voice no worse than he had before the operation, and the wound in the neck nearly healed.

Pathological report by Dr. A. R. Ferguson.—One or two small, rather friable pieces of tissue are submitted for examination. Seen microscopically, these present the characteristic features of squamous cell carcinoma. Many of the cell masses show alterations in the character of the cells from pressure. There are no "cell-nests." Here and there large phagocytes are observed, chiefly at the extremities of the masses of growing epithelium. These are associated with a moderate amount of leucocyte infiltration.

On the surface of the growth there is a tolerably compact layer of fibrine and leucocytes, with some red blood corpuscles.

MEETING VIII.—9TH MAY, 1904.

The President, MR. A. E. MAYLARD, *in the Chair.*

I.—FRESH SPECIMENS.

A. BY DR. G. B. BUCHANAN.

The sac and coverings of an umbilical hernia with omentum adherent round a large part of its wall, from a patient of 71 years of age operated on for a strangulated hernia.—The hernia had existed for eighteen years, and during that period was reducible and easily controlled by a truss. The occurrence of strangulation was indicated by pain and vomiting, but reduction was effected. On the fourth day, however, strangulation recurred, and this was associated with pain and continuous feculent vomiting. An attempt at reduction was unsuccessful. An incision was, therefore, made through the sheath of the rectus; the abdomen was opened, the omentum divided, the sac cut away, and the abdomen closed again by suture of the various structures in its wall.

B. BY DR. L. R. OSWALD.

The stomach from a case of general paralysis of the insane.—The patient had been in the Glasgow Royal Asylum for some years, and in many respects his symptoms differed from those described as typical of general paralysis. He was extremely restless and resistive, and without delusions of grandeur. His habits were depraved, and he required constant watching to prevent him swallowing gravel, stones, and rubbish of all kinds. Some days before death stomach symptoms manifested themselves, and at the *post-mortem* examination there was found in the stomach and bowels a considerable quantity of grit, consisting principally of sharp-edged particles of blaze, small pieces of stick, grape stems, &c. They had produced a condition of multiple minute ulceration of the stomach, and along with this there was marked thrombosis in some of the veins. Dr. Oswald referred to the fact that some observers believed the stomach showed changes in its structure in cases of general paralysis, but in the case he showed the changes were entirely different from those usually described, although an inflammatory condition of the organ might have predisposed to their occurrence.

C. By Dr. Alex. Napier.

Extensive lupus verrucosus, treated by curetting, actual cautery, and subcutaneous injection of tuberculin.—S. M'M., aged 14 years, was admitted to Victoria Infirmary on 3rd March, 1904, suffering from lupus verrucosus involving nearly the whole of right thigh, leg, and foot (front and back), and also left foot; there is a spot also on face at root of nose. On left foot there is a sinus leading down to metatarsal bone of great toe, where there is extensive caries.

On 7th March, the left foot and right lower limb up to knee were diligently curetted and then thoroughly dealt with by actual cautery, particular attention being paid to the edges of the patches.

On 26th April the right thigh and the spot on face were similarly treated.

Meanwhile, tuberculin (the *new* tuberculin) was injected every few days. The result, so far, is extremely satisfactory. The parts first dealt with are seen to be soundly cicatrised and healthy, while those treated on 26th April are healing rapidly.

II.—CARD SPECIMENS.

By Dr. G. B. Buchanan.

A case of epithelioma of the œsophagus penetrating into the larynx.—Mrs. J. A., 39 years of age, was admitted to the Cancer Hospital on the morning of 14th March, 1904, complaining of great dyspnœa and a tumour, the size of half a Tangerine orange, on the left side of her neck about the level of her larynx, which seemed to be pressing on the larynx and trachea. Owing to her distressing condition very little history could be elicited. Shortly, however, it was that she had suffered from sore throat for some months, had visited a throat dispensary twice, but had not been able to attend regularly as advised, and was not able to carry out any treatment at home. No question of blocking of the gullet having arisen at this time, particular enquiries were not made. She suffered lately from dyspnœa, however, and at last called in a doctor, who sent her to the Cancer Hospital.

Besides the tumour mentioned above, there are other smaller and less clearly marked nodules to be felt above and below this, lying beneath and in the line of the sterno-mastoid muscle. On the other side, also, are a few small nodules to be felt in the corresponding position. Both of these groups are tender on pressure, and have been there for some time. Examination with the laryngoscope showed only a little œdema of the larynx, and no special indication of the cause of this.

The same afternoon, tracheotomy was performed to relieve the dyspnœa, under eucaine anæsthesia, with the aid of renaglandin to prevent undue hæmorrhage. The operation was painless, except at one moment when the muscles were being drawn aside.

A moderate sized tube was introduced, and moist gauze placed over the wound.

For the next three days the patient kept fairly well, with easy breathing, and her colour much improved from its previous cyanotic tint. She took nourishment fairly well, and apparently without difficulty.

During the night of 18th March, four days after her operation, she became very weak, and began to complain of pains in the abdomen, and also pain in swallowing. Palpation of abdomen showed merely small hardened lumps, freely movable, and not tender—probably hardened fæcal masses; no tympanites. The small hard glands felt on both sides of the neck were a little tender, but not excessively so. For the first time she complained so much of the pain in swallowing that she refused to take any food by the mouth, and was ordered nutrient enemata. The tracheotomy tube was changed for one of a different curve, as there was a little tinge of blood in the mucus coughed up. The pulse was weak and soft, dyspnœa pretty marked, but no physical signs could be found to account for it. Steam vapour ordered. The patient, who was obviously very ill, gradually got weaker, and died about midnight on the 19th.

The body was examined by Dr. Gray, who gave the following report:—"The body is poorly nourished. There is a tracheotomy wound below the level of the thyroid isthmus. The wound is healthy. A tumour, the size of a pigeon's egg, is felt on the left side of the neck, below the angle of the jaw. The lungs and heart are quite healthy in appearance; there are no pericardial or pleuritic adhesions; the glands in the mediastinum are healthy, and there is no obstruction in the trachea. The air-passage through the larynx, however, is narrowed. On removing the larynx, an abscess is opened on the right side of the neck, close to the upper margin of the thyroid cartilage. The tumour on the left side is found to contain soft caseous material, and appears to be tubercular in nature. The tissues of the larynx are œdematous, but not ulcerated. In the œsophagus there is a large 'tuberculous looking' ulcer immediately behind the larynx. This ulcer extends quite round the gullet, and is rough and irregular. Its area is about 4 square inches, and it appears to have compressed the larynx from behind."

On splitting the œsophagus, the tumour is seen to have eaten into the posterior wall of the larynx, exposing the back of the cricoid cartilage. When the larynx is opened it is seen that a small nodule of the tumour has penetrated to the larynx, and is presenting just above the superior border of the cricoid cartilage. A small opening is seen at the apex of the nodule, but this is probably a result of bending the brittle tumour tissue to show its relations.

Microscopical examination of the tumour tissue shows it to be epithelioma. The swelling at the side of the neck was not examined, but was supposed to be tubercular.

III.—CASE OF ACROMEGALY.

By Dr. Alex. Napier.

Mrs. S., aged 34, was admitted to the Victoria Infirmary on 28th March, 1904, suffering from acromegaly in a well-marked, though not advanced, form. The first hint she had, five years ago, that anything was going wrong, was enlargement of her hands and feet, involving, of course, a difficulty in being fitted with gloves and boots; at the same time, her features altered to such an extent that a sister who had not seen her for three years did not recognise her.

There is no trace of abnormality of development in father, mother, brothers, or sisters.

Patient's facial aspect is quite characteristic, showing the usual thickening and broadening of the features; hands and feet, also, are typically enlarged. Her boots were some time ago three sizes larger than those worn five years ago, and of late her feet have so far exceeded the standard sizes that she has had boots specially made to measure, while her gloves have to be of "8½ size." The thimble and ring shown, formerly worn with comfort but now much too small, give us a measure of the change in size of the fingers in recent years. The photographs also shown, taken in 1890, 1891, and 1894, indicate plainly the alteration which has taken place in the patient's features.

There is no striking change in pelvis or vertebral column; clavicles, sternum, and ribs are thickened. Severe headaches were formerly complained of, but latterly these have been absent. There are no ocular symptoms, no exophthalmos or failure of vision, and the fundi of both eyes are found normal. Tongue somewhat enlarged; thyroid glands not palpable.

Skin is universally thickened with excessive sebaceous secretion.

Patient has been eight years married, but has had no children and no miscarriages; she ceased to menstruate at the age of 30 years.

Mental condition is quite unaltered. There are no arthropathies.

Treatment.—So far, the patient has been treated solely with preparations of ovarian tissue, chiefly on the ground of the early cessation of menstruation and the general change in aspect from the feminine to the masculine type. There is no notable change in patient's condition beyond a fall in weight, since admission, from 10 st. 10lb. 5 oz. to 10 st. 4 lb. 4 oz.

The skiagraphs of hands and feet show little beyond "fanning" of metacarpal bones, and some thickening of distal ends of middle phalangeal bones of hand.

IV.—CASE OF CHRONIC LYMPHATIC LEUKÆMIA.

By Dr. J. W. Findlay.

Dr. Findlay's paper will be found as an original article at p. 81.

The case was discussed by *Professor Muir* with reference to the unusual features emphasised by Dr. Findlay, and by *Dr. T. K. Monro* with reference to treatment. Dr. Monro stated that he preferred to use smaller doses of arsenic, as the larger were apt to induce toxic symptoms, which necessitated suspension of the administration of the drug.

V.—CASE OF SPLENIC ABSCESS AND EMPYEMA DUE TO THE BACILLUS TYPHOSUS, AND ASSOCIATED WITH A POSITIVE WIDAL'S REACTION, BUT WITHOUT ANY INTESTINAL LESION.[1]

By Dr. T. K. Monro and Dr. J. Archibald Campbell.

Mrs. L., æt. 33, housewife, was admitted to the Royal Infirmary on 12th January, 1904, complaining of cough and pain in the left side. She was quite well till about midnight on the 10th, when she was suddenly seized with a sharp pain in the left side. This was accompanied by shivering, which was soon followed by a sense of heat. Cough set in in the course of the night, and this greatly aggravated the pain. Sweating began on the 11th. She could suggest no cause for her illness, but she stated that, a week before admission, she had inflammation in the stomach for two days as a result of alcoholic excess. Apart from her confinements, her previous health had always been good. Of her ten pregnancies, the last two ended in abortion.

The family history threw no light on the nature of her illness.

On admission, it was noted that the general nutrition was good, and the patient, as she lay in bed, looked remarkably free from distress.

The heart was normal.

There was dulness at the left posterior base, with diminution of R.M. and of V.F.

The temperature was febrile and rather irregular, having frequently two maxima and minima per diem, and running most commonly between 99·8° and 103°, though it was observed as low as 99° and as high as 103·8°.

The pulse may be put down as usually between 110 and 140, and the respirations as from 24 to 36.

The urine contained a haze of albumen, and showed a deficiency of chlorides.

The leucocytes, which were estimated at 4,200 on admission, were found on the following day to be 11,700, and on the 14th, two days after admission, to be 15,600.

On the 19th, the spleen was noted as being enlarged to nearly three inches below the costal margin. A hypodermic needle inserted into the chest at the region of dulness revealed no fluid.

Apart from the fever and the splenic enlargement, there was thus far no symptom of enteric fever, but on the 25th it was found that Widal's test, with a dilution of 1 in 25, gave a positive result after one hour. On the 26th, a syringeful of semipurulent blood-stained, or at any rate chocolate-coloured, fluid was obtained from the left pleural cavity. This fluid contained a bacillus which resembled in appearance and which was ultimately shown to be the bacillus typhosus. On the 31st, patient coughed up a considerable quantity of purulent blood-stained fluid, which was found to contain the same bacillus as was got in the pleural cavity. The pulse was at this time about 140, but patient felt and looked well, and was able to move about freely in bed. It was assumed that the empyema had ruptured into the lung, and patient was removed to the surgical wards, where she was operated on by Dr. Rutherfurd. The quantity of pus found in the pleural cavity was less than was anticipated. Patient did very well for a time after the operation, but on the following afternoon she coughed up some more of the material which has been referred to. She died quite suddenly that evening (1st Feb., 1904).

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[1] A very similar case is reported in the *Medical Press and Circular*, 11th May, p. 505, by Mr. Frederick S. Eve and Dr. Thresh.

Inspection.—Examination showed that it was not the empyema which had ruptured into the lung, but a large perisplenic abscess, which had very thick walls and contained an immense quantity of thick chocolate-coloured fluid. The spleen itself was large and very friable, and it is likely that the abscess originated in that organ. The thickness of the abscess wall pointed to a duration of many months at least. The base of the left lung was adherent all over. The stomach was adherent to the spleen and diaphragm, but its mucous surface showed no evidence of either present or past disease. The small and large intestines were normal, and presented no evidence of past or present disease. One mesenteric gland was the seat of obsolete tuberculosis, but otherwise these glands were normal. The liver was the seat of cloudy swelling. The kidneys, pelvic viscera, heart, and right lung were healthy. The left lung was free from disease apart from the collapse and the changes associated with the conditions already described. No embolism was found in the main pulmonary artery.

From a bacteriological point of view, this case presents many points of interest. Cases have occasionally been recorded of infection by the typhoid bacillus without intestinal lesion, notably one published by Guarnieri, in which the primary infection seemed to be one of the bile-ducts, and where the organism was found in the blood-stream during life and in pure culture from the liver and spleen after autopsy. This particular case seems to me to be the nearest approach to similitude to our case which I can find on record. Numerous other cases are to be found in the literature of the subject indicating an absence of typical intestinal lesion, but they differ in this important fact, that in no case, as far as I can make out, was the organism *primarily* pyogenic. The pyogenic properties of the bacillus typhosus are well known; post-enteric inflammatory lesions in the form of osteomyelitis, periostitis, endocarditis, &c., leading to pus formation, have been observed frequently. One case is recorded where osteomyelitis developed seven years after the typical enteric infection, and in which the bacillus typhosus was found in pure culture, probably due to a colony of that germ which had become "pocketed" till that time.

Mixed infections, in which the part played by the bacillus typhosus is difficult to determine, are not infrequent, but in these the association of this organism with such markedly pyogenic organisms as the staphylococcus and streptococcus, point to its playing only a secondary part in the pus production.

The bacteriological investigation of the case under consideration was complicated, also, by the presence of the colon germ throughout.

To take up the points *seriatim*, the Widal reaction was performed on the 25th January. The dilution employed was 1 in 25, made accurately by means of a Thoma-Zeiss pipette. This dilution, we find, although taking a longer time to show agglutination, is more reliable than the lower dilutions. The positive result was obtained in forty minutes.

In the fluid obtained from the chest on the 26th January, a bacillus, morphologically identical with the bacillus typhosus, and decolorised by Gram's method, was observed in all the smears obtained from the material. This was the first indication that we had that we were dealing with an anomalous condition.

The pus was plated at once, for purposes of separation and identification, in agar-agar and gelatine, and when this investigation was proceeding and near completion the patient died, and we were fortunate in obtaining an autopsy, when the splenic condition was revealed.

The material from this organ was plated in Elsner's differentiating medium (potato gelatine, with 1 per cent of potassium iodide added).

The colonies obtained from these plates were in many instances typical of bacillus typhosus, but it was seen that another organism, with a slightly darker and larger colony, was also present. A number of colonies were "fished" up and introduced into glycerine agar to obtain a sufficiently large growth for further cultural experiments. The routine cultures, which are used to differentiate the bacillus typhosus from the colon germ, were made, namely, gelatine, slope, shake and stab, glucose broth in fermentation tubes, peptone broth and water, potato, milk cultures, &c.

Contamination here revealed itself, as a number of the tubes showed gas formation, milk coagulation, and the Widal reaction, with marked brown growth on potato. These were rejected after having been proved to be the bacillus coli communis.

A fresh start was made from the other tubes, in which the above features did not present. Controls were made with true bacillus typhosus, and the cultures obtained in the various media were identical in their most cardinal degrees.

The organism was also introduced into Uschinsky's medium and Fränkel's modification thereof, and compared with cultures of bacillus typhosus, enteritidis of Gaertner, coli, and paratyphosus, and its behavour in these media resembled that of bacillus typhosus, differing materially from the other organisms mentioned. The motility of the organism was very marked, and finally the Widal reaction, with the organism under question, undoubted typhoid serum being used, was positive in a solution of 1 in 25, in forty-five minutes.

The organisms mentioned as having been found in the chest fluid were proved to be identical with those found in the spleen.

While the pathological appearances of the organs at the autopsy were diametrically opposed to the view that the infection could be due to the Eberth-Gaffky bacillus, our investigation proves that the condition was an atypical typhoid infection. The case is further of interest in that during life we had a decided positive Widal reaction.

In referring to the journal of the bacteriological department, I find only one case in six years' returns in any way resembling the above. The case was that of another female patient in this infirmary, and the following points summarise it:—Widal's test was negative during life, but the dilution was 1 in 100, with a time limit of two hours. The sputum was examined for tubercle, as there was a suggestion from the clinical history that this organism might be present. Tubercle bacillus was not found.

At the autopsy, no intestinal lesions were found; there was parenchymatous nephritis, and the summary also indicated a septicæmic condition. The bacteriological examination of the spleen, however, revealed the presence of the bacillus typhosus in association with the colon germ.

Dr. R. M. Buchanan expressed a doubt as to the case being a true infection by the bacillus typhosus. The dilution (1 in 25) at which the Widal reaction was obtained was so small, and the time (40 minutes) that the reaction took to develop was so long as to render it practically of no significance. Also, he doubted whether Dr. Campbell's culture tests could really be held to differentiate typhoid from paratyphoid bacilli.

Dr. A. R. Ferguson agreed with Dr. Buchanan as to the small significance to be attached to the Widal reaction which had been obtained, and the insufficiency of the culture tests enumerated. He drew attention to the occurrence of leucocytosis, which was unusual in true typhoid infection.

VI.—CASE ILLUSTRATING BROPHY'S OPERATION FOR CLEFT PALATE.

By Mr. R. H. Parry.

Mr. Parry showed a child, 11 months old, on whom he had recently performed Brophy's operation for cleft palate. The operation consists in (1) pressing together the upper maxillæ after division of their attachment to the molars; (2) in keeping the bones firmly together by strong silver wire; (3) in paring and suturing the edges of the cleft. The advantage claimed is that the nasal twang so common after the usual method is diminished by the narrowing of the nasal chamber, and by leaving intact the muscles of the soft palate. In this case, as in the one described by Mr. Edmund Owen, the disturbance immediately following the operation was so considerable as to make one hesitate to carry it out unless the child were in very good condition.

Sir Hector C. Cameron agreed with Mr. Parry that the result would have to be good to justify the operation. There appeared to him to be considerable danger about this operation, whereas there was almost none in that usually performed.

Mr. A. E. Maylard expressed himself in terms of agreement with Sir Hector Cameron.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1903-1904.

MEETING VI.—9TH MARCH, 1904.

The President, DR. J. NIGEL STARK, *in the Chair.*

INTRAPERITONEAL HÆMORRHAGE AND HÆMATOCELE ARISING FROM TUBAL ABORTION OR RUPTURE, WITH RECORDS OF ILLUSTRATIVE CASES.

BY DR. G. BALFOUR MARSHALL.

Dr. Balfour Marshall's paper will be found as an original article at p. 91.

Dr. W. L. Reid said a certain percentage of cases were best treated expectantly. Many recovered perfectly without operation, though progress in some was slow. He had seen a number of cases of rapid absorption. In a recent case, the condition of the patient was too grave to permit of operation; yet, although the hæmatocele reached nearly to the umbilicus, the blood absorbed so rapidly that the patient could leave hospital in six weeks. He considered it was wise practice to wait if, when the case was seen, there was little pain and the tumour shrinking.

The *President* and *Dr. Munro Kerr* also spoke, and said they preferred to operate in cases of large hæmatocele.

MEETING VII.—23RD MARCH, 1904.

The Vice-President, DR. J. K. KELLY, *in the Chair.*

I.—SPECIMENS.

DR. MUNRO KERR showed (1) large multiple fibroids with multilocular cystoma; (2) ovarian cystoma with twisted pedicle; (3) pyosalpinx with ovary attached; (4) tubal gestation sac.

Dr. Eliz. Pace showed a fibroid with myxomatous degeneration.

Dr. Jardine showed a new curette for use in cases of incomplete abortion.

II.—CASE OF ULCERATION OF THE STOMACH AFTER THE REMOVAL OF A LARGE OVARIAN MULTILOCULAR CYST FROM A PATIENT WHO ALSO HAD A FIBROID OF THE UTERUS.

By Dr. Robert Jardine.

The patient, unmarried, aged 47, was first seen by me at her home in consultation with Dr. James Maclachlan, of Lockerbie. She was suffering from abdominal pain and some feverishness. For several months she had noticed that the abdomen was swollen, and was increasing in size. The pain was of recent origin. For the past year menstruation had only occurred very rarely, so that she had reached the menopause. Previous to that her menstruation had been normal.

The patient was very thin and somewhat emaciated looking, but she stated that she had never been robust. The abdomen was distended and tense, about the size of a full-time pregnancy. Palpation revealed that there was a large cystic growth, which extended almost to the ensiform cartilage. Throughout it were several hardish masses, especially on its left side. It was dull to percussion, and there was also some dulness in the flanks. Auscultation revealed no murmur, but distinct friction over the tender areas. *Per vaginam*, a rounded mass could be felt occupying the greater part of the pelvis. This mass was extremely hard, and about the size of a small fœtal head. There was a ridge on it which felt not unlike a suture. The cervix was displaced somewhat forwards. The mass could not be moved, and seemed to be continuous with the growth above.

It was quite evident that we had to deal with a semi-solid cystic tumour in the abdomen, with some recent peritonitis, and also some ascites, and a solid tumour in the pelvis which had all the feel of a fibroid. The menstrual history did not point to a fibroid.

From the emaciated condition of the patient, I was inclined to think that she was suffering from a fibroid which had become malignant at the onset of the menopause, but without a fuller examination under chloroform I declined to commit myself. As soon as the patient was able to travel she came to Miss M'Alpine's Home, and Dr. Reid kindly examined her under chloroform along with me. On passing a sound, we found the uterus was nearly 5 inches long. The two tumours seemed to be continuous. The abdominal tumour Dr. Reid considered to be an ovarian cyst, with some solid parts, one of which extended into the pelvis. I agreed with him, but still felt some doubts about the pelvic tumour.

Four days later, on 25th May, I operated, assisted by Dr. Edwards and Dr. Carstairs Douglas, who gave chloroform. On opening the abdomen some ascitic fluid escaped. There were a number of adhesions, but they were easily broken down, and gave no trouble. The fluid in the larger cysts was so thick it would not run through a cannula. The apparently solid portions of the tumour were made up of numerous small cysts packed closely together. The pedicle was attached to the left side. I tied it with interlocking ligatures. When the tumour was removed I found the pelvic tumour consisted of an intramural fibroid of the posterior wall of the uterus. There was also a small subperitoneal fibroid and one about the size of a small plum, separated from the uterus and attached to the bowel.

As the patient was in a feeble condition I decided not to attempt hysterectomy. The right ovary was atrophied, but I removed it along with its tube, to lessen the blood-supply to the tumour. I also removed the small fibroids. The abdomen was closed in layers, and a quart of normal saline solution was left in the peritoneal cavity.

The patient stood the operation wonderfully well, and, fortunately, did not suffer from sickness. Her pulse was very weak, but did not rise in frequency above 110. Her temperature remained practically normal throughout, and the wound healed well. I took the stitches out on the ninth day.

Early on the morning of the second day the patient became very collapsed, and broke out in cold perspiration about the head and chest. She complained of a feeling of sickness, but there was no active vomiting. A mustard leaf over the heart and a hypodermic of strychnine rallied her somewhat. When the bowels were moved by enemata the motion was found to be very dark, apparently from altered blood. Again, on the evening of the twelfth day very alarming collapse came on, and next morning the patient vomited fully half a pint of coffee-ground material.

Up to this time she had been on very light diet, and was taking bismuth and lactopeptine. Feeding by the mouth was stopped for a couple of days, and rectal feeding adopted. Fifteen minims of adrenalin chloride were given every three hours, and a teaspoonful of bismuth subnitrate in 5 oz. of water night and morning. After a couple of days, feeding by mouth was again commenced cautiously. A fortnight after the second attack, Professor Stockman strongly advised me to give 10 minims of tr. ferri perchlor. in about 2 oz. of water three times daily. This did admirably, and the patient gradually improved. She was able to go home about six weeks after the operation.

There is no doubt that the stomach was ulcerated, and that there were at least two attacks of hæmorrhage, and very probably several more. There were distinct indications of considerable dilatation, but I did not attempt any detailed examination of the stomach for fear of increasing the hæmorrhage.

The patient stated that her stomach had always troubled her, but she was not aware of ever having vomited any coffee-ground material.

Ulceration of the stomach is serious enough at any time, but when it occurs after a severe abdominal operation it is a very grave condition. Fortunately, it is a rare complication, but it does occasionally occur after the removal of large abdominal tumours. I have not gone into the literature of the subject more than to consult several of the more recent books on gynæcology, but in none of them have I found any reference to such a complication. I trust that some of the Fellows will be able to give their experiences of similar cases.

The co-existence of an ovarian cyst and a fibroid is not very remarkable, but it is somewhat remarkable that the fibroid, although large enough to fill the pelvis, had never caused any inconvenience, menstrual or otherwise. When the patient went home the fibroid had diminished somewhat in size. I have not seen her since, but heard about three months ago that she was quite well.

Dr. J. K. Kelly had had two cases of ulceration of the stomach complicating ovarian cystomata.

Dr. Carstairs Douglas said he did not mean to call the diagnosis of gastric ulcer in this case unwarranted, but he thought that it certainly was an error to label as ulcers all cases that showed hæmatemesis after abdominal section. Post-operative hæmatemesis was now a well recognised contingency, and he had seen it in several fatal cases at the Maternity Hospital when he had performed a *post-mortem* and found no ulcer. In some of the cases he thought it might be due to a septic thrombosis of the superior mesenteric or even portal vein.

Dr. Eliz. Pace had a patient who died on the twelfth day with gastric hæmorrhage after removal of the appendix. At the *post-mortem* an old gastric ulcer was found.

Dr. Balfour Marshall had a patient who nearly died from excessive gastric hæmorrhage occurring twice within a week after an emergency operation for ruptured ovarian abscess. The patient had, however, had symptoms of gastric ulcer previously.

Dr. Donald Duff said that shock caused congestion of blood-vessels in the neighbourhood of the stomach, and that post-operative hæmatemesis might be due to congestion of blood-vessels.

Dr. Jardine, in replying, said that he was quite familiar with cases of post-operative hæmatemesis, as he had seen several, and also with cases of dark vomit in patients dying of sepsis, but he wished to point out that in his case the hæmatemesis had occurred twelve days after operation, and he, therefore, did not consider it was what might be termed a post-operative case. Hæmatemesis, of course, did not always mean that there was ulceration, as he had seen severe hæmatemesis in a case of uncontrollable vomiting, where at the *post-mortem* examination no ulcer could be found. His case was, he thought, very much like the one Dr. Pace had referred to.

III.—AN ESTIMATE OF THE RELATIVE MERITS OF VENTRO-FIXATION AND CERTAIN OTHER OPERATIONS FOR THE RELIEF OF UTERINE PROLAPSE AND RETROFLEXION.

By Dr. W. L. Reid.

Prolapse and retroflexion are amongst the common diseases affecting the female reproductive organs, and are a more or less important item in the work of most practitioners of medicine. Nor are they diseases easy to treat successfully; indeed, some authors, such as Hart and Barbour, consider them as to some extent incurable, the statement being made that "Prolapsus uteri is therefore a condition with serious and irremediable secondary results."[1]

Recently, in preparing a clinical lecture on the subject, I was led to examine the details of cases in which I had operated at the Western Infirmary, and to formulate the conclusions to which actual experience had forced me to come, and I thought it might interest you to hear these conclusions and somewhat of the facts on which I grounded them.

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[1] *Manual of Gynæcology*, fourth edition, p. 573.

I have limited the question to prolapse and retroflexion or retroversion of the uterus, because I think these are the most eligible and debatable conditions from the point of view of surgical treatment.

To begin with, I may say that, if a prolapse or retroflexion—in which latter term I include retroversion—is capable of being so modified as to effectually relieve the patient by the use of a pessary, I usually content myself with recommending it. I do this all the more readily because I am sure that the skilful use of a pessary often results in a permanent cure. But a large percentage of cases is not relieved by such treatment, and can only be fairly dealt with by surgical means. What should that means be? Which cases are most suitable for particular methods? These are the questions I wish now to consider.

First of all, it may be mentioned that where pessaries fail and where there are no pelvic adhesions, shortening the round ligaments frequently does well. I have performed this operation twelve times for prolapse, with the result that one or more years after operation seven cases were found cured, one much relieved, and two as bad as before. It ought, however, to be said that, in the two cases of failure, the uterus was suddenly torn from its moorings by accident, one a day, and the other a month, after operation. I have largely given up this operation, partly because of the difficulty of performing it, partly because of the danger of hernia resulting, and partly because of appreciation of the other operations to be mentioned.

The next method which I favoured, and that, of course, for prolapse only, was anterior and posterior colporrhaphy, or, to be more exact, anterior colporrhaphy and perineoplasty. To be reliable, this has to be thoroughly done by taking away a good piece of mucous membrane anteriorly and restoring the perineum by Tait's operation, at the same time removing a large piece of the mucous membrane of the posterior vaginal wall, and so greatly narrowing the lumen of the vagina, as well as restoring the normal block of perineal tissue. Even with this, if the uterus is heavy, it is well to amputate the cervix to begin with, or, if less heavy, insert a pessary for some months afterwards.

By and bye, in young women who were still likely to bear children, I began to perform hysteropexy, at first attaching the anterior wall of the uterus to the anterior abdominal wall, and, within the past three years, following Kelly's plan of attaching the posterior uterine surface instead of the anterior. I depart from his instructions to the extent of rawing the posterior wall of the uterus, and using three sutures instead of two. He also advises that the abdominal fixation should only be resorted to when narrowing the vagina fails, or is so likely to fail that abdominal fixation is added to increase the efficiency of the former operation. He thinks that, if the cervix is amputated and the vagina well narrowed, hysteropexy will seldom be needed. I have performed the latter frequently as a primary operation, and trusted to it alone to sustain the uterus.

Let us now consider the merits and demerits of the two last mentioned operations, viz., narrowing the vagina and abdominal fixation of the uterus. The drawbacks of the former are these—

1. It is rather difficult to perform well.
2. The tight perineal stitches often give pain.
3. The operation takes a considerable time.
4. From its position near the rectum, the wound sometimes suppurates.
5. Sexual intercourse and labour are interfered with.

Its advantages are—

1. Little risk of sepsis.
2. It is fairly successful if well performed.

The drawbacks of hysteropexy are—

1. Danger of sepsis.
2. Failure from dragging away of the stitches.
3. Hernia may follow.
4. Rectocele, and especially cystocele, may not be cured.
5. Labour may be seriously interfered with if the fundus has been too firmly fixed to the abdominal wall.

Its advantages are—

1. It is easily and rapidly performed.
2. It is fairly successful.
3. It does not interfere with intercourse or labour if not too firmly fixed.

The results of my hospital experience have been as follows:—Twenty-six cases of prolapse have been operated on by colporrhaphy and perineoplasty. One was seen three months after operation, and was found well; one, six months after, with slight prolapse; one, twelve months after, as bad as before operation; and one, six years after, well.

The other twenty-two did not return to give thanks, whether because they were quite well, as is the fashion of hospital patients, or because they became ill again and went elsewhere, I do not know. Suffice it to say, that they were dismissed well, a month after operation.

Again, twelve cases of prolapse were treated by abdominal fixation. Of these, one was seen six weeks after operation, and was well; two, three months after, well; one, three months after, as bad as before; one, four months after, well, except for cystocele; one, five months after, well, but for cystocele; one, six months after, well, but for cystocele; and one, twelve months after, well. Four were dismissed well a month after operation, and did not return.

Ten cases of retroflexion were so treated. Two, seen four months afterwards, were well; one, five months after, well; and one, two years after, well. One died of sepsis on the fifth day after operation; the other five were dismissed well, and not afterwards seen.

I find that various opinions are held as to the actual value of these operations. Thus, Herman, of London, advises thorough anterior and posterior colporrhaphy, but only in women past the child-bearing period. For others he recommends hysteropexy, but with *fixation*, not *suspension*, of the uterus. He does not fear difficulty from pregnancy.[1] Kelly, of Baltimore, advises colporrhaphy, with amputation of the cervix, and, only when these means are likely to fail, suspension, not fixation, of the uterus to the anterior abdominal wall.[2] Mundé, of New York, condemns hysteropexy in any form, and advises a very compound operation of amputation of cervix, shortening the round ligaments, narrowing the vagina, and restoring the perineum.[3] Possi, of Paris, advises against abdominal fixation, unless where amputation of the cervix and colporrhaphy, with restoration of the perineum, fail. He prefers shortening the round ligaments to hysteropexy, and thinks that the latter alone is not to be trusted.[4]

The conclusions to which I have personally come are these—

Where there is otherwise untreatable retroflexion, with or without adhesions, and giving rise to serious symptoms, I would perform hysteropexy, using three silk sutures, rawing the posterior surface of the uterus, and taking a large hold of the parietal peritoneum and subperitoneal tissues—that is to say, an abdominal suspension. If the ovaries and tubes were both so diseased as to require removal, I would prefer removing the uterus also, as the simpler and more effectual operation.

Where the patient is beyond child-bearing, I would amputate the cervix and almost close the vagina by colporrhaphy and perineoplasty. If, in such a case, the uterus were very heavy and likely to dilate the narrowed vagina, I would also perform, not an abdominal suspension, but an abdominal fixation, by attaching the rawed uterine surface to the raw muscular wall of the abdomen, so that there would be little fear of dragging away from its position.

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[1] *Diseases of Women*, 1898, p. 139.

[2] *Operative Gynecology*, 1898, vol. ii, p. 153.

[3] *Clinical Gynecology by American Authors*, 1895, p. 519.

[4] *Med. and Surg. Gynæcology*, 1892, vol. i, p. 516.

In cases where the uterus is not heavy and the woman within the child-bearing period, I would restore the perineum and partially narrow the vagina with the introduction of a narrow Hodge pessary before the patient got out of bed. In such cases I believe that, although pregnancy supervened, the remaining part of the vaginal mucous membrane might be trusted to dilate sufficiently to allow a mature child to pass without rupture.

Lastly, I believe that, in certain cases of prolapse in young women, where the uterus is not heavy, where the vaginal tissues are simply dilated, and where for any reason a suitable pessary is badly borne, a hysteropexy, by which the posterior surface of the uterus, slightly rawed, is attached by three silk sutures to a large surface of parietal peritoneum and subperitoneal tissues, is a trustworthy operation by itself, and would not interfere with a subsequent pregnancy. But it must be postulated that the operation be performed with aseptic surroundings, and the patient fended from strain for three or four months afterwards. In these circumstances, the danger would be very slight, and the chance of success very fair.

Of a number of operations which have been suggested and practised for the diseases which we are considering, such as Wylie's operation for the shortening of the round ligaments by doubling them within the abdomen, and of those by which the uterus is fixed in a new position by suture from the vagina, I have not spoken, partly because I have no personal experience of them, and partly because they do not seem to have met with much general acceptance.

Dr. Jardine said that he had listened to Dr. Reid's paper with much interest. He would have liked to have asked Dr. Reid what the results were as regards cystocele after the operation. In the first case in which he (Dr. Jardine) had done Cæsarean section, the uterus had become very adherent to the abdominal wall, and the patient had developed a very marked cystocele. Dr. Reid had not referred to vaginal fixation of the uterus, which had come into practice some years ago, but which had now been largely given up. The subsequent results as regards labour had been disastrous in a good many cases. Two such cases had been treated in the Maternity Hospital. One had had a normal labour, but the other had required Cæsarean section, after attempts had been made to deliver by version and craniotomy had failed. Dr. Leo v. Lingen, a Russian, had written a very interesting paper on this subject, and had given the results of labour in some 200 cases, where Cæsarean section had been required in 10 cases, with 6 fatal results, and many others of difficult labours. Webster also stated that, in 70 pregnancies, only 39 were normal; and in the labours, 12 Cæsarean sections had been required. In the face of such statistics, he (Dr. Jardine) was quite convinced that vaginal fixation ought not to be done in a woman who was likely to bear children. In regard to ventro-fixation, Webster gave the results in 554 pregnancies. Of these, 341 were normal, 61 aborted, and 152 had various complications. In the labours, there were 19 version, 28 forceps, and 10 Cæsarean section cases. Nine of the mothers and 47 of the children had been lost. Dr. Jardine said that these statistics quite proved that there was considerable risk as regards subsequent pregnancies, and he was of the opinion that any operation which firmly fixed the anterior uterine wall to the abdominal wall was bound to cause a considerable amount of discomfort to a woman during her pregnancy, and also to add a considerable risk during her labour. Suspension of the uterus did not seem to be so dangerous, but it also had its risks.

Dr. Alex. MacLennan said that he had tried Parson's method on a few cases, but, having always performed on those cases plastic operation as well, had refrained from making a vaginal examination, and so could not say what effect the injection of quinine had had. In one case it had entirely failed. He was not also very favourably disposed to vaginal fixation, and preferred abdominal hysteropexy combined with a vaginal plastic operation done at the same operation. In fixing the uterus either vaginally or abdominally, the lower uterine segment or the inferior part of the anterior surface of the body was stitched, in the one case, to the vaginal roof, and in the other to the recti muscles. In the latter case, three silkworm-gut sutures were inserted through skin, muscle, and uterus, after pushing aside the parietal peritoneum. He did not see how such a fixation could interfere with pregnancy. After the menopause, it did not much matter where the stitches were put in; in vaginal fixation, if the stitches were inserted too low, the operation tended to be of no avail.

Dr. Balfour Marshall said he only operated in retroflexion where pessaries proved useless in relieving symptoms, and these cases were comparatively few, or where the uterus was fixed by adhesions. He preferred ventro-fixation by Howard Kelly's method, using strong catgut instead of silk, and in those cases he had been able to trace the result had been good, and labour not interfered with where a subsequent pregnancy had occurred. Where operation was demanded in prolapse of the uterus, the first step was a thorough narrowing of the vagina, with restoration of the perineal body. He also amputated the cervix if hypertrophied. This frequently sufficed, but many cases relapsed, and, if so, ventro-fixation should be performed. He did not think that we were justified in performing ventro-fixation or suspension in every case of severe prolapse, as some did well after colpoperineorrhaphy. There was also this advantage, that if there was a tendency to prolapse after a plastic operation, relief might be afforded by a small Hodge or Albert Smith pessary. There was no doubt that many of these cases were disappointing, and that many whom we imagined to have been successes had passed into other hands. He had no experience of quinine injections into the broad ligaments, as he considered it bad treatment to attempt to cure one pathological condition by setting up another.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1903-1904.

MEETING X.—17TH FEBRUARY, 1904.

The President, DR. CHARLES R. M'LEAN, *in the Chair.*

MEDIASTINAL TUMOUR.

BY DR. JOHN PATRICK.

Dr. Patrick made a further communication on the case of a mediastinal tumour demonstrated to the Society on 18th November, 1903. He showed the specimen and microscopic sections of the tumour.

From 18th November, 1903, the patient had no new symptoms, but the cough increased and sleep could not be got. The veins of the chest increased still further, but there was no œdema, and emaciation and dysphagia did not increase. Pulse averaged 110; respiration, 26. Pain was uniformly absent, but patient complained of tightness of the chest. He died quietly from asthenia, one month after being shown to the Society. Total duration of illness, five months; dilatation of thoracic veins, one month.

Post-mortem.—This was limited to the thorax, the contents of which were removed *en masse.* The lung involved was removed with difficulty on account of adhesions. The whole lung and œsophagus were removed. Dr. Patrick demonstrated the tumour and discussed the manner in which neighbouring structures had been affected.

Dr. J. Lindsay Steven congratulated Dr. Patrick on the careful account of this tumour of the mediastinum, with its clinical history and pathology. He was unable to speak regarding this particular case, but he would rather direct attention to the subject of mediastinal tumours generally. Thirteen years ago this was a branch of pathology which occupied much of his attention. Dr. Patrick's case was one of lympho-sarcoma. Dr. Steven had reported three or four cases in his monograph, and these were all subjected to microscopical examination. He recognised the microscopical section of Dr. Patrick's case as identical with those he had recorded. He saw no giant-cells such as are found in myeloid sarcoma.

Mediastinal tumours in general might be divided into five classes or groups, viz.:—

1. Sarcoma and lympho-sarcoma.
2. Cancer.
3. Tubercular and other specific new growths.
4. Fibromata.
5. Miscellaneous.

Solid tumours of the mediastinum are mostly sarcoma or lympho-sarcoma. Clinically, we do not meet with many cases in the wards, and indeed very few cases are seen by one physician; he had only seen one or two cases in eight years in his wards, with the addition of one case in private, showing that these cases are not often met with.

Symptoms and physical signs.—Sarcomatous and lympho-sarcomatous tumours tend to infiltrate and surround the normal structures, such as veins, leading to thrombosis; the arteries are likewise surrounded, and sometimes you find them as smooth-walled tunnels. The nervous structures suffer in the same way; he had often dissected nerves out of such tumours.

In aneurysm, on the other hand, the tendency is to push structures aside, and even to destroy them altogether. It is a common thing to find the trachea pushed aside and the pneumogastric nerve stretched; veins are shoved aside. An aneurysm is sometimes found bulging into the trachea.

Œdema, with evidence of venous circulation being interfered with, is more often seen in tumour than in aneurysm; in the former there is often localised œdema of the side of the face or arm, and, with a gradual encroachment round the wall of the veins, thrombosis supervenes; whereas in aneurysm there is greater displacement of veins and the circulation is kept up. Nervous symptoms are not so common in lymphosarcoma as in aneurysm where the vocal cords are often involved, and for this reason, that though the nerves are buried in the tumour they are not pressed on or stretched as in aneurysm.

He had seen gangrenous cavities through involvement of the pulmonary plexus within the chest.

Mediastinal lympho-sarcomatous tumours often give rise to pleurisy with effusion. The extension of the tumour excites an acute pleurisy with effusion, but higher up the chest other physical signs are obtained. In making an exploratory aspiration you may find the fluid more blood-stained than in ordinary pleurisy.

Acute pericarditis may also supervene by extension of nodules; he had seen cases where these made their way into the pericardium.

When there develops a glandular swelling in the suprasternal notch, or in the axilla, there is strong evidence of mediastinal growth.

Pathology.—These tumours always start in the mediastinal glands. The question might be raised, Can we regard this condition as a form of Hodgkin's disease? He (Dr. Steven) was of opinion that the involvement of the lymphatic glands was not comparable with Hodgkin's disease, but that it was a neoplasm starting in the mediastinal glands, and a *local disease*, whereas Hodgkin's disease is a *general disease* of the lymphatic system.

Sarcomatous tumours within the chest must be regarded as primary and secondary; the commonest class is a sarcomatous tumour connected with the testicle or the long bones of the leg. He recollected one medical man who died with such a tumour; in his case there was an undescended testicle which had taken on a sarcomatous growth. On the other hand, the tumour may originate at the base of the lungs. Diagnosis of primary cancer of the mediastinum is not easy; there may be a difficulty up till the very end.

Cancer develops from the embryonic epithelium.

Secondary cancer of the lungs or mediastinum is of secondary importance. Dr. Steven had seen a solid tumour-like mass due to tuberculosis.

The syphilitic tumour arises from bone in the region of the sternum, and grows inwards to the mediastinum. One case he had met with was that of a *fibroma*, and in rheumatic cases fibromata are not uncommon. Mention must also be made of the miscellaneous forms, including hydatids.

Dr. John Anderson was of opinion that the large cells in microscopical sections, referred to by Dr. Patrick, were not myeloid cells, but were really cells from the adjacent tissue. The sections were those of a lympho-sarcoma.

MEETING XI.—2ND MARCH, 1904.

The President, DR. CHARLES R. M'LEAN, *in the Chair.*

OBSERVATIONS ON SOME OF THE MORE RECENT REMEDIES IN THE TREATMENT OF DISEASES OF THE EYE.

BY DR. JAMES HINSHELWOOD.

Dr. Hinshelwood's paper will be found as an original article in our issue for June, 1904, at p. 409.

Dr. Jas. Dunlop said we were all familiar with the use of adrenalin in blanching the conjunctiva, and that this had its value where public men or singers suffering from conjunctivitis were afforded temporary relief; but with regard to its administration in the case of ulcers of the cornea, he would like to hear from Dr. Hinshelwood as to whether adrenalin would promote or prevent the healing of the ulcer by reason of the avascularity so produced.

Dr. C. R. M'Lean referred to the thoroughly practical paper, and to the hints thrown out, which would be found valuable in general practice. The observations and experiments recorded by Dr. Hinshelwood were not only interesting, but could also be relied upon as trustworthy.

Dr. Hinshelwood, in reply, said he wished to emphasise the point that argyrol possessed all the virtues of protargol, and was to be regarded as a most powerful, antiseptic, bactericidal agent. Instances had occurred where protargol stained the conjunctiva, but he had never seen this in the case of argyrol. As to adrenalin retarding the healing of ulcers of the cornea, while not giving his opinion as an expert, he wished to say that he never used it in these cases, as it constricted the blood-vessels, and it was well known that where repair was the object aimed at, a plentiful supply of blood to the part was Nature's way of restoring the damage—hence, theoretically, it would be a mistake to use adrenalin in these circumstances. On the other hand, where we had only to deal with congestion, unaccompanied by secretion, adrenalin was useful in treating the excessive hyperæmia. With regard to holocaine, it was used to relieve pain in the eye, and was a most powerful anæsthetic. Why should we use cocaine, which was the more dangerous? He had never seen any harm from holocaine used in the manner he had indicated.

MEETING XII.—16TH MARCH, 1904.

The President, DR. CHARLES R. M'LEAN, *in the Chair.*

I.—TRACHEAL TUBE REMOVED FROM THE LEFT BRONCHUS.

BY DR. ROBERT FULLERTON.

The patient was a young man on whom tracheotomy had been performed, and in whom, after some months, the tracheal tube became detached from the shield, and slipping down, lodged in the left bronchus. It was abstracted by means of laryngeal tube forceps introduced through the tracheal opening while the patient was under chloroform.

The paper thereafter dealt with the symptoms likely to be met with after the entrance of foreign bodies into the air-passages, and the importance of these symptoms as indicating the position of the foreign body, and hence as guiding to the remedial measures that should be adopted. It was held that the trachea should be opened at an early stage.

The difficulty in extracting rounded bodies that had passed into the smaller air-passages was touched on, and it was suggested that in such cases, where the body was impacted, adrenalin might be found useful for loosening it.

Comments on the case were made by *Drs. Dunlop, John Patrick, Russell, Wm. Patrick*, and the *President*.

Dr. Fullerton replied.

II.—INTESTINAL OBSTRUCTION FROM GALL-STONE IMPACTION.

By Dr. David Couper.

The symptoms of intestinal obstruction were due to impaction of a large gall-stone in the jejunum.

The patient, a man, æt. 65, had been operated upon as a last resort, with successful results.

Stereoscopic photographs of the calculus were shown, and also one half of the stone which had been cut in two.

Remarks on the case were made by *Dr. Wm. Patrick, Dr. John Patrick, Dr. John W. Findlay* (who, without further proof as to the nature of the calculus, was not prepared to admit that it was a gall-stone, as it might be an intestinal calculus), *Dr. Dunlop, Dr. Fullerton*, and the *President*, who said that the Society was indebted to Dr. Couper for directing attention to the possibility of this condition.

Dr. Couper briefly replied.

GLASGOW NORTHERN MEDICAL SOCIETY.

The Society held the eighth ordinary meeting of the session, in the Shepherds' Hall, Bath Street, on 3rd May.

Dr. J. Galbraith Connal showed several cases illustrating secondary and tertiary syphilitic disease of the throat and nose, and made remarks upon them. Photographs were also shown of a case with marked nasal deformity due to syphilitic disease, which was remedied by paraffin injection. The apparatus for the injection of paraffin was also shown. Dr. Connal advocated the use of paraffin of high melting point.

On the motion of the *President*, a hearty vote of thanks was given Dr. Connal for his interesting demonstration.

Dr. Alexander Johnston next read a paper entitled "Observations on the Value of the Widal Serum Reaction in Enteric Fever." The lecturer confined his remarks chiefly to the value of the reaction in aiding the recognition and notification of enteric fever in general practice. Of the cases of supposed enteric sent to hospital, there was an error of only 16 per cent—a result which he considered very creditable to the practitioner. Of those which proved to be not enteric, a considerable proportion were tubercular in character. A few cases, also, which were sent in under other diagnosis—particularly scarlet fever—were found to be cases of enteric fever.

The Widal reaction consists of the cessation of motion and agglutination of organisms when a small quantity of blood is mixed with them which has been taken from an infected animal. Blood is drawn from the lobe of the ear, caught in a sterilised tube, and taken to the laboratory. Here it is mixed with the active bacteria, and if the patient from whom the blood is drawn be suffering from typhoid, agglutination is got.

Points of importance in performing the test are that the blood must be dilute, the test culture must be young and pure, and there must be a time limit. The standard dilution is 1 in 50, the time limit one hour, and the culture is one of less than twenty-four hours age.

In looking over a series of over 300 cases, four groups might be differentiated:—(*a*) Cases clinically enteric, yielding a positive reaction—over 240 cases; (*b*) cases clinically not enteric, yielding a positive reaction—about 30; (*c*) cases clinically enteric, yielding a negative reaction—some 2 cases; (*d*) cases not clinically enteric, yielding a negative reaction—about 30.

Probable sources of error are the existence of para-typhoid forms, and late development of the agglutinating reaction—possibly appearing after the second or third week, or during convalescence. A positive reaction may be obtained in those suffering from some other disease who have already had typhoid.

The accuracy of the test is probably 90 to 95 per cent, but, in everyday practice, with cases in the early stages, there is probably an error of about 17 per cent.

After several questions had been answered by Dr. Johnston, he was accorded a hearty vote of thanks.

REVIEWS.

Social Diseases and Marriage: Social Prophylaxis. By PRINCE A. MORROW, A.M., M.D. London: Sidney Appleton. 1904.

IT is scarcely necessary to say that the expression social diseases is here used to indicate the venereal diseases, and, in particular, gonorrhœa and syphilis. The appalling ravages of gonorrhœa among the innocent female section of society are only now coming to be recognised by the medical profession, and it is highly desirable that practitioners should warn men who consult them with regard to what the patients look upon as a trifling disorder, which makes a fit subject for a joke, of the grave dangers they introduce into family life if they marry before being completely cured. To illustrate the importance of the subject we quote some of Dr. Morrow's facts, or at least figures. There is good reason to believe that gonorrhœa is more influential than syphilis as a depopulating agent. Janet, writing in 1902, asserts that from the social point of view gonorrhœa is a hundred times as important as syphilis, and he is disposed to think that, even more than tuberculosis, it is the pest of our age. Noeggerath estimates that of every thousand men married in New York, eight hundred have or have had gonorrhœa. Neisser considers gonorrhœa responsible for more than 45 per cent of involuntarily sterile marriages. Kehrer found that among eighty sterile marriages, forty-five were due to gonorrhœal changes. But these figures relate to primary sterility, whereas the more characteristic effect is the production of secondary sterility. The birth-rate might be considerably higher than it is were it not for the absolute and the one-child types of sterility which result from gonorrhœa in the female. In addition to sterility, however, we have to reckon with the untold sufferings of women from endometritis, metritis, salpingitis, and peritonitis, involving in many cases protracted or permanent invalidism, surgical operations, and a fatal issue. According to Neisser there are in Germany alone at the present time 30,000 blind persons whose loss of sight is due to gonorrhœal ophthalmia. The sterilising influence of gonorrhœal changes in the male, and the protracted disablement caused by gonorrhœal rheumatism, must also be borne in mind. Nor should we altogether forget the rarer but even more formidable consequences of this infection, such as myelitis and infective endocarditis.

Different observers put the proportion of sterile marriages in which the fault is due to the husband at from 17 to 25 per cent, and it must be remembered that in a large proportion of the remaining cases where the sterility is due to the wife, this condition is a result of gonorrhœa communicated to her by her husband.

The serious nature of syphilis as a depopulating agent is much better known than that of gonorrhœa, and need not be illustrated here. But it would give a false impression of Dr. Morrow's work if we simply indicated how urgently it teaches the devastating influence of gonorrhœa and syphilis from the point of view of society. The subject of professional secrecy is, of course, constantly emerging in connection with diseases of this nature, and it is to be noted that in Norway and Denmark, compulsory notification (the information being kept secret by the sanitary authorities) has proved to be a valuable measure by disclosing dangerous foci of contagion. In certain European countries it is already a serious offence against the law if an individual who knows that he is suffering from a contagious sexual disease exposes another person to the risk of contamination.

As might be anticipated, Dr. Morrow recognises the failure of state-regulation. No doubt this system is not wholly bad, since it tries to prevent young women from entering upon a life of shame, and to reform those who have already fallen, but these ameliorative agencies can be, and are conducted, where no state-regulation exists; and the latter has little or no influence upon the widespread system of clandestine prostitution which, in Continental countries where regulation exists, is the most dangerous means of spreading diseases of this class. The medical profession, as a whole, is slow in assimilating the teaching of those who, in different countries, have been led by a thorough study of the subject to recognise that state-regulation of vice does not prevent the transmission of venereal disease. Its fatal defect is that it ignores the masculine spreader of the contagion; it assumes that the woman is the chief offender and the responsible cause. The essential cause of prostitution is "masculine unchastity—the polygamous proclivities and practice of the male;" and "the chief contributory cause is that false social code of morals" which readily condones in the man what it regards as unpardonable in the woman. Yet a great English writer, in one of his delightful studies of women, tells us that probably one of the last things to be civilised by man will be woman.

We strongly recommend all medical men to study Dr. Morrow's book. The style, though diffuse, is eminently readable; and the subject, which is of the utmost importance, is discussed in a truly laudable manner, though no doubt in somewhat exaggerated language.

A Manual of General Pathology for Students. By SIDNEY MARTIN, M.D., F.R.S., F.R.C.P. With Numerous Woodcuts from Microphotographs and a Coloured Plate. London: John Murray. 1904.

THE present volume is based on the lectures which the author has delivered during the past half-dozen years at University College, London, and is intended to furnish the medical student with as much general pathology as he requires for his professional training. The first chapter is on inflammation, and alludes to kindred subjects, such as repair and phagocytosis. The second chapter treats of fever, with its phenomena and causes. In the third chapter we are introduced to the subject of infection, and after getting a short account of hyphomycetes and blastomycetes, proceed to the consideration of schizomycetes or bacteria. The characters of the microbes which cause specific fevers are arranged in tabular form, and information is supplied as to artificial cultivation, relations to oxygen and sunlight, and variability in virulence. The fourth chapter deals with the chemical products of bacteria, such as nitrites, putrefactive products, ptomaines, intracellular and extracellular poisons, albumoses, &c. The products of certain individual bacteria are considered, including those of the bacillus anthracis, bacillus diphtheriæ, bacillus tetani, bacillus typhosus, bacillus coli communis, bacillus tuberculosis, bacillus mallei, and vibrio choleræ Asiaticæ. It is suggested that the toxins and intracellular poisons are of the nature of ferments. We notice that on p. 70, the souring of milk is attributed to the bacillus acidi lactici, whereas on p. 52 we are told that a hyphomycete, the oidium lactis, is "the cause" of that phenomenon. Among the subjects taken up in the fifth chapter are the proofs, sources, modes and course of infection; mixed infections; and various infections occurring in man, including anthrax, pyogenic infections, infective endocarditis, septicæmia, tuberculosis, syphilis, intestinal diseases, and malaria. Malignant growths also receive consideration.

The sixth chapter treats in considerable detail the difficult question of immunity, the factors in immunity, the different kinds of immunity, the immunity produced by various pathogenic organisms and their poisons, the blood and tissues in immunity; and the prevailing theories of immunity are here brought under review. The following chapter contains matter of a simple kind; it deals with the different kinds of degeneration, necrosis and regeneration. Changes in the circulation and circulatory organs are next considered, and then the changes in respiration in disease. Chapters XI, XII, and XIII are devoted to changes in the blood. Chapters XV, XVI, and XVII treat of the liver, kidneys, and ductless glands. The subject of metabolism is discussed in Chapter XVIII, while the XIXth and concluding chapter is devoted to the nervous system.

This work is an able and interesting one, but the different sections are not well balanced. Those parts of the subject to which the writer has given special attention, such as the various aspects of the question of immunity, are discussed at length, and even, it may be said, with undue detail, whereas other parts are dismissed with too scant attention. We can scarcely recommend the volume as a text-book for the ordinary medical student, but advanced students and teachers will find much that is valuable in it. The illustrations are numerous and useful. So far as we have noted, in the acknowledgment of figures borrowed from *Kirkes' Physiology*, the apostrophe is invariably misplaced, a mistake for which the printer cannot be held responsible.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By PROFESSOR DR. CARL VON NOORDEN. Part IV: The Acid Autointoxications. Authorised American Edition. New York: E. B. Treat & Co. 1903.

THE present treatise, we should say, is at least as good as any of its predecessors—the volumes on obesity, nephritis, and colitis—and will prove very acceptable to scientific physicians. Practically speaking, the autointoxications considered here are those due to the acetone bodies, viz., acetone itself, diacetic acid, and β-oxybutyric acid. The three are so closely allied that it is usually sufficient to consider them collectively. The first chapter deals in a general way with the subject of autointoxication by acid products of metabolism.

The second chapter is on the sources of the acetone bodies; and as part of it is devoted to disproved theories as to their origin, it will be understood that there is a certain amount of discursiveness and tough reading in the earlier part of the book. Chapter III is on the question of the place of origin of the acetone bodies; this is concluded to be intracellular and not intestinal. In Chapter IV we have an important discussion on pathological non-diabetic acetonurias. The latter parts of the treatise interest us more on account of their practical character. Thus, Chapter V, on diabetic acidosis, touches on the danger of feeding diabetics too strictly; and Chapter VI, on therapeutic considerations, points out methods of combating acidosis, describes von Noorden's oatmeal cure, and gives directions for the administration of alkalies and for the treatment of diabetic coma. Altogether this little volume is an interesting and important contribution to modern scientific medicine.

Operative Surgery. By HERBERT WM. ALLINGHAM, F.R.C.S. London: Baillière, Tindall & Cox. 1903.

THIS book is a valuable one for the student who wishes well-compressed yet suitable fare, and it has fewer of the defects than are commonly found in the average handbook of the condensed type so much sought after by the man who is working mainly with a view to his examination. It has not, in its compression, lost the quality of readableness, and that, after all, is refreshing. Further, the illustrations are copious, and, speaking generally, they are exceedingly effective. They are mostly rough sketches with little artistic pretension. This is, in the experience of most teachers, rather an advantage than otherwise. The most telling pictures, as far as the instruction of the student goes, are those which have more of the diagrammatic than of the artistic in them. Mr. Allingham's most effective illustrations are those—and they form a preponderating proportion of the whole—which are purely diagrammatic.

It is unfortunate that it should be necessary to cavil at anything in a work which merits, for its general plan and execution, a cordial reception by the profession, and yet it is impossible to pass over without remark the somewhat numerous defects in description, nomenclature, and reference.

On page 81 the anatomy of the popliteal artery is shown in a rough sketch. In this the internal popliteal nerve and the popliteal vein are shown distinctly *external* to the artery. On the page opposite both nerve and vein are stated to occupy a position *to the inner side* of the artery. Both cannot be correct. On page 62, speaking of amputation of the arm through the shoulder-joint by "external flap only," Mr. Allingham says, "here there is practically no *inferior* flap." We suppose he really means "internal" and not "inferior." The name of Kocher is in more than one place spelled Kocker. Surely that is not intentional.

Under the heading "Operations on the Prostate," Mr. Allingham speaks of "prostatotomy" and "prostatectomy" as the two chief procedures. But on reading the description of "prostatotomy" we find it is really a *partial* "prostatectomy," for we are told that it "consists of removing the obstructing lobe by means of a specially designed electrode passed *per urethram*," &c. We cannot commend a looseness in nomenclature such as this.

The most glaring error—for it cannot be otherwise described—is in the description of Macewen's operation of supracondyloid osteotomy for knock-knee. Here it is stated—"At a point a finger's breadth above, and half an inch in front of the adductor tubercle an incision about an inch long is made down to the bone. A chisel or saw is next introduced and the bone partly divided and fractured."

It is practically certain that any surgeon following such a course will, in all but the very slightest degrees of knock-knee, drive his saw or chisel right into the epiphyseal plate; which, it must be remembered, is set obliquely in such cases. That would certainly be bad surgery, and almost inevitably lead to disaster in the way of interference with bone growth. Besides, the bone is at that level much too broad to be easily severed by chisel or saw, even supplemented by manual force. The incision, as well as the level of bone severance, ought to be at a distinctly higher level. Macewen's own direction is, "a sharp-pointed scalpel is introduced on the inside of the thigh, at a point where the two following lines meet, one drawn transversely a *finger's breadth above* the superior tip of the *external condyle*, and a longitudinal one drawn *half an inch in front of the adductor magnus tendon*." The italics are ours.

The adductor tubercle is *not the guide to the level* of the incision.

An operation described under the name of any surgeon should be given as put forward, or as modified, by that surgeon, and in no other way.

The chapter on operations on the head and brain is perhaps the least satisfactory part of the book.

Probably the most useful portions of the whole work are the memoranda added to the descriptions of many of the operations described. They are of considerable practical value, and "give hints which it has been found from personal experience facilitate their performance."

While we have already spoken well of Mr. Allingham's book, and recommended it to a considerable number of students of surgery, we very much hope that the author will take an early opportunity to correct the errors of description and nomenclature which its present issue presents.

Aids to Surgery. By JOSEPH CUNNING, M.B., B.S., F.R.C.S. Eng. London: Baillière, Tindall & Cox. 1904.

THE "Aids" series of booklets produced by Baillière, Tindall & Cox is rendered more complete by the publication of this one.

"Intended," as the writer frankly states, "as a help for students preparing for examinations," it no doubt adequately fulfils its object. The author acknowledges his indebtedness to the manual of Rose and Carless and the works of Cheyne and Burghard and Bland-Sutton ("Tumours, Innocent and Malignant"), his general *arrangement* of the subject following closely that of Rose and Carless.

Without entering into the question of the effects, for good or ill, upon the mind of the student of the average "cram book," it must be admitted that, of its kind, the one before us is specially satisfactory.

It is clearly written, carefully systematised, and still interesting enough. Indeed, we almost feel that it more than fulfils the object set before him by its author. It is quite readable, and may be of interest and value to students of a larger growth, with examinations already behind them.

"*First Aid*" *to the Injured and Sick.* By F. J. WARWICK, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. TUNSTALL, M.D., F.R.C.S. Ed. Third and Revised Edition. Bristol: John Wright & Co. 1903.

THE success of the first two editions of this work amply explains the early appearance of the third edition. The latter has been very materially improved by the addition of a considerable number of illustrations and by the alteration of many others. There have also been made a number of minor changes in the text. As now issued, this book seems to embody in a most satisfactory fashion, at once concise and interesting, almost all that can be said to be within the province of the lay reader or ambulance pupil. It is now one of the most satisfactory of all the text-books on "First Aid" with which we are acquainted.

Practical Guide to Surgical Bandaging and Dressings. By W. JOHNSON SMITH, F.R.C.S. London: The Scientific Press, Limited. 1903.

THIS very small book of 167 pages is intended as a kind of pocket-book for junior students and nurses in surgical wards. As such it is good enough in its way. It is small enough to go readily into even a pocket of straitened dimensions—it measures, in fact, 4¾ inches by 3½ inches by half an inch. So far as we can see, however, it fills no gap in surgical literature which specially called for filling; there is little novel about it except its diminutive size. It is, nevertheless, somewhat profusely illustrated, and many of the figures, especially those of splints, are quite good. The first two figures in the book, reproduced from photo-micrographs of micro-organisms, are out of place in such a work, and might well have been omitted.

We fail to see what good end the production of this book can serve.

Die Technik der Lithotripsie. Vorlesungen von PROF. FELIX GUYON. Mit Ermächtigung des Autors übersetzt und bearbeitet von DR. GEORG BERG, Frankfurt-a-M. Wiesbaden: Verlag von J. F. Bergmann. 1903.

THIS work is a German translation of essays by Guyon which appeared first in the *Annales des Maladies des Organes Génito-Urinaires* in 1899 and 1900. While not therefore new, the matter as now collected will prove of use to those interested in this department of surgery. The book is freely illustrated, and the figures convey to the reader a clear idea of the various steps in the technique of lithotripsy.

How to Take Care of a Consumptive. By M. FORREST WILLIAMS. London: John Long. 1903.

WRITTEN in simple language, this little guide may prove of some service to any intelligent lay person upon whom devolves the care of consumptive patients. Directions as to food, exercise, baths, massage, clothing, and ventilation are succinctly given. The general aim of the book is good, and the hygienic indications are sound, but the cry of the despairing consumptive will still be—"Here is the proper treatment laid down, but how am I to obtain it?"

Tuberculosis. By NORMAN BRIDGE, A.M., M.D. London: W. B. Saunders & Co. 1903.

THE eighteen chapters of this book embody the most recent views as to pathology and treatment of pulmonary tuberculosis. Beginning with a description of the *bacillus tuberculosis*, the succeeding two chapters are devoted to the tuberculous process and the forms of tuberculosis. Chapter IV deals with the pathology of tuberculosis, and Chapter V with its etiology. Chapters VI, VII, and VIII are of particular value, and deal with the symptoms, physical signs, and diagnosis of the disease. The two following chapters deal with prognosis and prophylaxis. Chapters XI to XV deal with the various forms of treatment, and the concluding chapter discusses the question of sanatoria for tuberculosis. All who have in any way to deal with the disease will find much help in a close study of this work.

Portfolio of Dermochromes. By PROFESSOR JACOBI. English adaptation of Text by J. J. PRINGLE, M.B., F.R.C.P. Parts III and IV. London: Rebman, Limited. 1903.

IN Part III of this *Portfolio* there are 30 plates, representing 52 figures. These are illustrative of different kinds of acne and eczema, area, chloasma, keloid, molluscum contagiosum, pediculosis, scabies, nævi, mycosis fungoides, Paget's disease of the nipple, pemphigus neonatorum, sarcoma cutis, scleroderma, sycosis, drug eruptions, rodent ulcer, warts, vitiligo, xanthoma, and xeroderma pigmentosum.

Part IV is devoted to venereal affections, and includes

14 plates, which contain 27 figures, illustrating the various cutaneous manifestations of syphilis and also soft sores.

Taken along with the text, the plates of the *Portfolio* may be strongly recommended as a thorough and agreeable means of acquiring a good knowledge of diseases of the skin.

The Practical Study of Malaria and other Blood Parasites. By J. W. W. STEPHENS, M.D.Cantab., D.P.H., and S. R. CHRISTOPHERS, M.B.Vict., I.M.S. London: Longmans, Green & Co. 1903.

THIS is an excellent manual for all who intend to work practically at the parasitic blood diseases of warm climates. The work begins with the preparation, fixing, and staining of blood films, and goes on to consider normal and abnormal blood. The malarial parasite is studied in detail, and great attention is given to mosquitoes in the different stages of their development. The hæmamœbidæ, trypanosomata, and filariæ are also considered. The numerous illustrations add much to the lucidity of the treatise, which is thoroughly practical in character, and packed full of valuable information and instruction.

Irregularities of the Teeth. By J. SIM WALLACE, D.Sc., M.D., L.D.S. London: The Dental Manfg. Co., Ltd. 1904.

DR. WALLACE believes that irregularities of the teeth are in every case acquired characters. His view of their etiology is that insufficient development of the muscles of mastication, and especially of the tongue, from want of proper exercise, leads to a correlated imperfect development of the jaws and consequent irregularity of the teeth. He condemns the custom of feeding young children on soft pulpy food, which requires little or no chewing, and urges that a child's diet, as soon as it has teeth to masticate with, should be of such a nature as to compel mastication. Dr. Wallace states his ideas clearly and decidedly, and the book contains much that deserves study. The chapters on "Prevention of Irregularities" may be specified here, as they deal with a subject which, if the author's views are accepted, would clearly lie as much in the province of the medical as in that of the dental practitioner.

A Handbook of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I. Eighth Edition. London: H. K. Lewis. 1904.

THE fact of this new issue being the eighth edition of this text-book speaks volumes for its popularity and usefulness. It supplies what the general practitioner and the student wish to know about the eye without being overburdened with detail. It is neither too small nor too large for them, and this partly accounts for the popularity of this text-book. But, perhaps, its chief excellence is in its admirable clearness and conciseness, two qualities which are often lamentably awanting in medical text-books. Mr. Swanzy is to be commended for his admirable chapter on ocular diseases and symptoms in relationship to diseases of the brain and of the spinal cord.

Too little attention is given in text-books of ophthalmology to this important subject of the relationship of eye symptoms to medical diagnosis, and this excellent chapter on eye symptoms in relationship to disease of the nervous system is an example of the completeness of his text-book.

The volume is of a very handy size, and yet, by the absence of padding and the conciseness of style, it contains a very complete and up-to-date account of the various departments of ophthalmic science and practice. The book contains an admirable index, which greatly enhances its utility. This handbook will be found a safe and excellent guide for the student of medicine or the general practitioner who wishes to get a practical and up-to-date knowledge of the subject without being confused by an excess of detail. It is to be commended for its lucidity, its conciseness, and its completeness, which make it a peculiarly useful book for the student.

Praktischer Leitfaden der qualitativen und quantitativen Harnanalyse (nebst Analyse des Magensaftes) für Aerzte, Apotheker und Chemiker. Von DR. SIGMUND FRÄNKEL. Mit 5 Tafeln. Wiesbaden: J. F. Bergmann, 1904; Glasgow: F. Bauermeister.

THE author of this practical guide to the examination of the urine is a teacher of medical chemistry in the University of Vienna, and the book took origin in the notes which he drew up in connection with the courses he conducted in the University in the years 1896-1902. We can speak highly of the volume. It strikes us as carefully prepared and lucidly arranged. Students cannot be expected to use it as long as it is available only in a foreign tongue, but to teachers we can heartily recommend it. We should prefer to carry out Fehling's qualitative test for sugar in a manner slightly different from that described here. A few pages are devoted to the investigation of the stomach contents.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

Case of Spleno-Myelogenous Leukæmia showing marked Improvement under the use of Roentgen Rays. By C. H. Weber (*American Medicine*, 21st May, 1904).—The patient was a woman, aged 53. Her symptoms began two years before with pain in the splenic region. Shortly after, the abdomen was noted to be enlarged; and there was progressive weakness, loss of appetite, headache, vertigo, and failing vision. On examination, the spleen was found to extend to within an inch of the crest of the ilium, and it was firm and tender to the touch. The liver was also enlarged, its lower edge being 2 inches below the costal margin. The examination of the blood was as follows:—Red corpuscles, 2,400,000; white corpuscles, 328,000; hæmoglobin, 30 per cent. Of the white corpuscles, 40 per cent were polymorphonuclears, 40·8 per cent myelocytes, 13·3 per cent eosinophiles, 5·16 per cent lymphocytes. For the first month treatment was by means of arsenic, but at the end of that time there was but little improvement to note. For the next five months the Roentgen rays was the only form of treatment. It was given daily for fifteen minutes at a time, and focused over the splenic area. The result has been a progressive improvement in the general condition of the patient and in the blood—the blood, indeed, at the time of writing being practically normal, viz., red corpuscles, 4,720,000; white corpuscles, 7,200; hæmoglobin, 72 per cent; differential count of white corpuscles—polynuclears, 73·6 per cent; lymphocytes, 23·8 per cent; eosinophiles, 2·6 per cent; no marrow cells. The spleen, too, lessened very much in size, its lower edge being now just below the costal margin.

Dr. Weber quotes three other cases where this treatment has also been successful, but as to whether or not the cure will be permanent time only will determine.

Family Periodic Paralysis: Seventeen Cases in Four Generations. By Geo. F. Holtzapple (*American Medicine*, 30th April, 1904).

CASE I is a man, aged 68. His first attack of paralysis came on at the age of 14, and this attack, and those subsequent to it, all came on during the night. There were never any premonitory symptoms to be noted, for patient would retire feeling perfectly well, and wake up to find himself helpless. If the attack were severe, paralysis would be complete, except for the muscles of the face and eyeballs. Swallowing, too, was usually intact, but speech was often difficult, and patient would not be able to take a deep respiration. The sphincters of bladder and rectum were never involved. There was never any headache complained of during an attack, and no pains in the limbs, even on firm pressure; the paralysed members, however, would feel somewhat numb. There was usually some nausea, but no vomiting. The attack was most often induced by indulging in a rich meal, especially if taken in the evening. As examined at the present time, the patient looks a well-nourished and healthy man. Heart sounds are good, and, generally, examination of the chest and abdomen is negative. There is some weakness in the lower limbs, and some atrophy, most marked in the flexors. This loss of power in the legs seems to have been of very gradual onset, and two years ago patient was compelled to take to an invalid chair. The arms are affected to a much less extent, for they are strong enough to work the wheels of the chair. The tendon reflexes of the legs are absent, and those of the arms much diminished.

CASE II is a son of Case I, and has had one attack of paralysis, when 24 years of age. He has a son and daughter so far unaffected.

CASE III (æt. 30) is a daughter of Case I. She has had attacks similar to those of her father, frequently repeated since the age of 15.

CASE IV is this patient's son, a boy of 16, and he has had a number of typical attacks of this paralysis.

CASE V (a brother (?) of Case I). His attacks began at 20, and were of frequent occurrence until the age of 54, when he died in an attack.

CASE VI, his son, began to have attacks at 16, and died in one at the age of 25.

CASE VII is a daughter of Case V. She had attacks of headache till she was 31, when the headaches ceased and she began to have periodic attacks of paralysis.

CASE VIII (a brother (?) of Case I) had recurrent attacks of paralysis during a period of three years, when he died in an attack.

CASE XI, sister of the last, never had paralysis, but had, on an average, one attack of sick headache a week during her whole lifetime, each attack lasting twenty-four hours. During the last three years of her life she was rather uncertain in her gait, and at times the lower limbs were very useless. She died at the age of 76, having had three sons and four daughters. All the sons suffered from headaches and periodic paralysis, and each one died in an attack of paralysis. The first of these (Case X) had his first attack at 17, and they recurred at intervals of a week to three or four months, till he died at the age of 27. With the second (Case XI) the attacks began at 16, and occurred at intervals of a few days to a few months. The third (Case XII) seems to have had only one attack of paralysis, dying within twenty-four hours of the seizure, at the age of 43.

CASE XIII is a sister of those last three. She suffers from attacks of headache and slight paralysis.

CASE XIV is a daughter of Case XI. She is 22 years of age, and is a frequent sufferer from periodic paralysis.

CASE XV is a son of Case XIII. He began to suffer from sick-headache at the age of 9. When 16 the headaches ceased and the attacks of paralysis appeared. This case has two brothers and one sister. The sister and one of the brothers had headaches after the age of 9. With the brother the headaches ceased at the age of 16, when there were a few attacks of paralysis, but none since then. The sister ceased to have headaches at 20, and afterwards had frequent attacks of paralysis.

As to the pathology of this condition, nothing certain is known, but the author is of opinion that it is of the nature of a vasomotor neurosis, affecting the blood-supply to the anterior horns of the cord. The most successful treatment was by means of large doses of bromide of potassium. This drug does not seem to lessen the tendency to recurrence of the paralytic seizures, but it seems certainly to have an abortive influence on the development of the attack if taken during or shortly after its onset.

Two Cases of Landry's Paralysis. By Theo. Diller (*American Medicine*, 7th May, 1904).

Case I was a man, aged 37. Eight weeks before admission to hospital he complained of weakness in both legs. This gradually increased, and in the course of a few days the patient was compelled to take to bed. Later, the paralysis of the legs became complete, and loss of power was also noted in the arms. Later still, the sphincters became involved. On examination, there was found to be hyperæsthesia all over the body. The patient died from paralysis of respiration, nine weeks after the onset of the first symptoms.

Post-mortem examination showed central chromatolysis in the anterior horn cells in the lumbar region; also, degenerate fibres in the left sciatic and ulnar nerves.

The symptoms were, without doubt, those of an ascending paralysis, but it is also noted that the patient had been a heavy drinker, that the liver was greatly enlarged, and that the symptoms and *post-mortem* findings are quite such as one might expect in alcoholic neuritis. The mental condition, however, was quite normal till twenty-four hours before death, during which time the patient was delirious, becoming later comatose.

Case II was a man, aged 45. He also had been a heavy drinker, but had not been indulging for the last couple of years. His symptoms were those of a progressive paralysis, beginning in the legs, involving later the arms, and, finally, the nerves from the bulb, causing death by paralysis of the respiratory apparatus. The duration of the symptoms was six months. The sensory symptoms seem to have been limited to tenderness along the course of the nerve trunks, and there is no note of mental disturbance. There was no *post-mortem* examination in this case.

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

Rapid Treatment of Suppurating Bubo by Incision, Expression, and Immediate Suture.—In the *Annales des Maladies des Organes Génito-Urinaires* for 15th May, 1904, Légrain describes a method which he has employed for the last two years, and which he finds to reduce very considerably the duration of treatment in such cases. The region affected is thoroughly cleansed and shaved, and, after anæsthetising with chloride of ethyl, an incision is made through the skin and subjacent tissues, in the long axis of the bubo, and right down to the site of suppuration. The contents of the bubo are then expressed, and all the fluid that can be got away is forced out by massage and pressure for about a minute. When there is no more pus in the fluid which comes away, when it is simply blood that escapes, this process is stopped. The abscess cavity is never irrigated, but the edges of the sore are sponged with swabs of absorbent cotton soaked in sterile water. The lips of the wound are then sutured, this being carried out very carefully and by interrupted suture. Horsehair may be used, or, if the patient is not to be seen again, catgut may be employed. No drainage is required. Having cleansed the part by swabbing with sterilised water, a collodion dressing is applied, and light pressure is exercised on the part for several days.

From the eighth to the twelfth day the stitches may be removed, and union by first intention is practically always obtained. Légrain has employed this method in all sorts of venereal glandular suppuration, in those following soft chancres, in cases of suppurating adenitis following gonorrhœa, and in buboes connected with ulcerating, hard (or syphilitic) chancres of the penis. He operates as soon as pus can be diagnosed.

When the bubo is advanced, the skin violet coloured and thinned out over the collection, Légrain excises the part of the skin whose vitality is doubtful, removing it by an elliptical incision and suturing, as already described. If this is not done, the skin affected would probably necrose, and trouble occur.

Légrain finds that, in cases of simple suppurative adenitis, a direct cure is the rule. When there is peri-adenitis and several glands are involved in an inflammatory mass, two things may happen after operation upon the largest bubo; where peri-adenitis is little marked, merely involving some small glands which are but little inflamed, the symptoms disappear after incision of the prime focus; where there are present in the composite mass one or more other glands which also go on to suppuration, it will be necessary to treat them exactly as the first.

Légrain has had occasion to perform three or four consecutive operations on the same patient, at several days' interval, each operation followed by healing by first intention. There seems to be little or no difference between the various forms of suppurative venereal adenitis treated in this way.

Cure is rapidly obtained in cases where the pus contains pyogenic organisms, even as in those where the pus is sterile. Where the pus contains pyogenic organisms, the tissues, and the fluids exuded from them after the evacuation of the pus, and their treatment, as indicated above, evidently suffice for the destruction of the micro-organisms which remain. This unaltered resistant or bactericidal action of the tissues is regarded by Légrain as preferable to, and likely to be much more efficient than, the action of antiseptics, which act deleteriously upon the tissues, however they may affect the organisms.

Altogether, Légrain concludes that the proceeding he describes gives results infinitely better than the generally recommended methods of to-day. Not only is the cure of suppurating buboes obtained much more rapidly, but the scars are less ugly and much less noticeable.

DISEASES OF THE SKIN.

By J. WYLLIE NICOL, M.B., C.M.

Two Peculiar Cases of Fragilitas Crinium. By Dr. G. T. Jackson (*Journal of Cutaneous Diseases, including Syphilis*, vol. xxi, No. 10). —The first case was that of a clerk, aged 26. There was no family history of hair affection. His general health was good, but not vigorous, as he got little outdoor exercise, owing to close confinement in his office all day. He was rather nervous in manner, but gave no history of nervous disorders. One month before coming under observation, he had his hair cut very short. He noticed that, while most of it grew in a normal way, there were patches in which his hair did not grow.

Examination showed that his hair was thinned over the whole top of his head, and that his scalp was bound down to his skull so closely that it was hard to move. There was no sign of dandruff. His hair was dry and lustreless. On both sides of the head and over the forehead were patches where the hair was short and closely curled up to the scalp. The patches were sharply defined like ringworm. There was no sign of inflammation. No microscopical examination was made. Under treatment with tar soap and salicylic acid oil, the patches disappeared and the hair became normal in six months.

The second case was that of a lawyer, aged 35. He was very stout and tall. His general health was good. He took no exercise because of his great weight, and passed the day in his office. He lived well, smoked fifteen cigars a day, and worked hard. He had paralysis agitans of one arm. His hair had been growing thin for some years. Four weeks before coming under observation, he noticed on combing his hair that it was matted on the top.

Examination showed on the top of his head two well-marked, round, sharply defined patches, in which the hair was short and apparently broken off. On the back of the head was another patch where it was broken off and curled close down to the scalp, like that of a negro. There was no sign of inflammation.

On microscopical examination, no parasite was found, but many hairs showed the appearances of trichorrhexis nodosa. The patient was cured in a few months by the same treatment.

The writer draws attention to the fact that in both these cases of sudden, circumscribed atrophy, there was progressive alopecia associated with close confinement in offices. In one case, the excessive use of tobacco might be an etiological factor.

The Clinical Relationship of Seborrhœa.—This is the subject of the address delivered by Dr. Brooke at the annual meeting of the Dermatological Society of Great Britain and Ireland, 1904 (*British Journal of Dermatology*, vol. xvi, No. 6).

After discussing the various aspects of the question, and criticising the views and terminology more especially of Unna, Sabouraud, and Audry, he concludes as follows:—"It seems a pity that writers of such distinguished merit should bias their observations by the limitations of terms for which we are obviously not ready. Of this, the fact that each one objects to the others' terms is sufficient evidence, and encourages me to state my own view without terms and without theory, but simply as the result of long clinical observation. There is an affection of the epidermis, characterised by abnormal greasiness and the formation of horny plugs in the pilo-sebaceous infundibula. There is a series of pityriasic eruptions, beginning with a simple patchy, or circinate pityriasis, and ending by a series of unbroken steps with psoriasis. These certainly have the aspect of microbic affections, and may be psoriasides in a wide sense; they may become eczematous, especially when developed in conjunction with the seborrhœic state, but are not eczema; and they may be influenced in their aspect and evolution by the seborrhœic condition, but are not seborrhoïdes, unless that term be confined to those cases in which they are combined with the seborrhœic condition to form a seborrhœic dermatitis."

On a Case of Paget's Disease of the Umbilicus. By Drs. T. Colcott Fox and J. M. H. Macleod (*British Journal of Dermatology*, vol. xiv, No. 2, 1904).—The patient was a seafaring man, of 65 years of age, with a good constitution. There was nothing of importance in his personal history, and no family history of cancer. In the umbilical region was a rounded eczematoid patch of about two inches diameter, which had gradually been forming for about eleven years. It had caused little inconvenience. The central part of the patch was of a brilliant colour, exulcerated, and exuding serum, but silvered over in spots by epithelium. This raw centre passed peripherally into a well-marked, raised, smooth broad border, which terminated abruptly, and over which the cuticle was intact. The whole patch felt considerably infiltrated. It was excised.

In reviewing the histology of their case, the authors draw attention to the following points:—

1. Although the affected epidermis was that of the umbilicus, and not the areola of the nipple, still, the changes present in it, the peculiar degenerated prickle cells, the occurrence of the dense sheet of plasma cells infiltrating the underlying papillary layer of the corium—in short, the whole histological architecture was similar to that described in typical cases of the disease. These initial cellular changes in the epidermis, allied somewhat to those occurring in psorospermosis follicularis vegetans (Darier's disease), could not be mistaken for those of chronic eczema or psoriasis. "It would seem that the histological changes in the epidermis in Paget's disease are characteristic and pathognomonic, whether the affection occur in the nipple, umbilicus, or genitalia."

2. "There was no evidence of definite malignant change in the epidermis. The degree of proliferation was limited, and the basal layer intact. It has been asserted that the peculiar change of the epidermis is malignant from the

first. This does not seem to us to be so any more than that ordinary warts, the warty growths in xeroderma pigmentosum, or pigmented nævi (moles) are malignant from the outset. They may all be described as precancerous lesions of the skin, which have a potentiality more or less certain of becoming malignant." "It has never been demonstrated, and it seems highly improbable, that the degenerated cells which occur in the epidermis or the epithelium in Paget's disease can take on malignant characters. It appears to us, however, more reasonable to assume that the malignant growth originates in epithelial or epidermal cells, which, not having degenerated, have reverted and assumed a capacity for proliferation through the prolonged action of some cause which, acting most powerfully on undifferentiated cells, produces their degeneration, than in a matrix of cells which has been deposited there at some period more or less remote."

3. "The inclusion of a portion of Meckel's diverticulum in the centre of the umbilicus, in this the only case of Paget's disease which has been recorded in that situation, may be a coincidence, but it is a suggestive one. Cases have been recorded in which the cancer grew from the epithelial cells of mucous glands, and had malignancy supervened it is possible that it might have taken its origin in the cells lining the follicles in the cut-off portion of gut in the umbilicus. Still, in the sections, the columnar epithelium on the surface and lining these follicles seemed perfectly healthy, although the neighbouring epidermis was markedly affected.

4. "The general histological appearances suggested a chronic inflammatory disturbance, involving the papillæ and leading to proliferation, œdema, and degeneration of the epidermal cells, and to the formation of a resistant cellular infiltration in the upper layer of the corium. It was a process that in some ways suggested lupus erythematosus, in so far as the œdema and the underlying infiltration were concerned, but differed from it in that in the one it tends to malignant proliferation, while in the other it leads to atrophy and scarring. It did not seem to us that the epidermal changes were primary, though this is a debatable point, in view of the chronic character of the cellular infiltration in the corium. In condyloma acuminatum, for example, which is due to irritating discharges acting on the skin, and in which the epidermis is primarily involved, the changes in the corium are of a simple, inflammatory nature, and very slight in comparison. In this case, even beneath the apparently healthy epithelium of the central portion of the section, a dense cellular infiltration was present, as if the papillary and subpapillary layers were first attacked and the overlying epithelium and follicles had not yet been involved; in other words, as if the poison had acted first on the blood-vessels of the skin, not necessarily having been carried there through the general circulation, but more probably produced locally, either by some micro-organism, or by the epidermal cells in response to some peculiar form of irritant."

5. No light was thrown on the actual cause of the disease.

Books, Pamphlets, &c., Received.

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Cleft Palate and Hare-Lip: The Earlier Operation on the Palate, by Edmund Owen, M.B. London: Baillière, Tindall & Cox. 1904. (2s. 6d. net.)

A Treatise on Applied Anatomy, by Edward H. Taylor, M.D. Illustrated with 178 Figures and Plates from Original Drawings, many Printed in Colours. London: Charles Griffin & Co., Ltd. 1904.

A Text-Book of Clinical Anatomy for Students and Practitioners, by Daniel N. Eisendrath, A.B., M.D. Beautifully Illustrated. London: W. B. Saunders & Co. 1904. (21s. net.)

Nothnagel's Encyclopedia of Practical Medicine (Saunders' English Edition). Diseases of the Intestines and Peritoneum, by Prof. Dr. Hermann Nothnagel; edited, with Additions, by Humphrey D. Rolleston, M.D. Authorised Translation. London: W. B. Saunders & Co. 1904. (21s. net.)

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences, edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. III, September, 1903. London: Rebman, Limited. 1903. (12s. 6d. net.)

Acid Autointoxications: being Part IV of several Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition, by Prof. Dr. Carl von Noorden, and Dr. Mohr. Bristol: John Wright & Co. 1904. (2s. net.)

Saline Therapy: being Part V of several Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition, by Prof. Dr. Carl von Noorden, and Dr. Carl Dapper. Bristol: John Wright & Co. 1904. (3s. net.)

Manual of Practical Ophthalmology, by George A. Berry, M.B., F.R.C.S.Ed. With 223 Illustrations, mostly from Original Drawings. Edinburgh: Young J. Pentland. 1904.

Clinical Lectures on Mental Diseases, by T. S. Clouston, M.D. Sixth Edition. London: J. & A. Churchill. 1904. (14s. net.)

A Manual of Fever Nursing, by Reynold Webb Wilcox, M.A., M.D., LL.D. Illustrated. London: Rebman, Ltd. 1904. (1 dol.)

An Index of Symptoms as a Clue to Diagnosis, by Ralph Winnington Leftwich, M.D. Third Edition. London: Smith, Elder & Co. 1904. (6s. net.)

International Clinics: A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles, edited by A. O. J. Kelly, A.M., M.D. Vol. II: Fourteenth Series, 1904. London: J. B. Lippincott Company. 1904.

Arhythmia of the Heart: A Physiological and Clinical Study, by Dr. K. F, Wenckebach. Translated by Thomas Snowball, M.A., M.B. With 7 Plates and 20 Figures in the Text. Edinburgh and London: William Green & Sons. 1904.

Report of the City of Glasgow Fever Hospital, Ruchill, for the Year ending 31st May, 1903, by Alex. Johnston, M.D., D.P.H. Glasgow: Robert Anderson.

Adenoids, by Wyatt Wingrave, M.D. London: Baillière, Tindall & Cox. 1904. (2s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 23RD JULY, 1904.

	WEEK ENDING				
	June 25.	July 2.	July 9.	July 16.	July 23.
Mean temperature, . .	54·8°	57·2°	55·5°	61·4°	59·8°
Mean range of temperature between day and night, .	28·2°	36·6°	19·2°	32·3°	32·4°
Number of days on which rain fell, ...	4	4	4	4	5
Amount of rainfall, . ins.	0·57	0·46	0·48	0·49	0·91
Deaths registered, ...	235	243	253	234	243
Death-rates, ...	15·4	15·9	16·5	15·3	15·9
Zymotic death-rates, . .	2·1	2·1	2·1	2·0	2·2
Pulmonary death-rates, .	4·6	4·1	4·0	...	...
DEATHS—					
Under 1 year, ...	47	48	54	60	48
60 years and upwards, .	39	46	46	35	41
DEATHS FROM—					
Small-pox, ...	1	2	2	...	2
Measles, ...	5	4	2	1	2
Scarlet fever, ...	1	4	...	1	3
Diphtheria, ...	2	...	...	1	1
Whooping-cough, . .	13	14	13	13	13
Fever, ...	1	...	4	1	3
Diarrhœa, ...	9	8	10	13	10
Croup and laryngitis, .	...	...	...	...	1
Bronchitis, pneumonia, and pleurisy, ...	34	39	39	18	39
CASES REPORTED—					
Small-pox, ...	20	19	11	3	7
Diphtheria and membranous croup, ...	7	8	S	6	9
Erysipelas, ...	17	14	15	6	18
Scarlet fever, ...	3	14	17	9	15
Typhus fever, ...	...	5	2	...	...
Enteric fever, ...	8	4	9	4	9
Continued fever, . .	...	...	...	...	...
Puerperal fever, . .	...	1	2	...	4
Measles,* . . .	71	67	54	46	46

* Measles not notifiable.

SANITARY CHAMBERS.
GLASGOW, *28th July, 1904.*

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ORIGINAL ARTICLES.

A CASE OF GENERAL AMNESIA?[1]

BY JOHN LINDSAY STEVEN, M.D.

CASES of partial amnesia—such as aphasia, word-blindness, word-deafness, &c.—are not uncommon in their occurrence, and their pathology has been very completely worked out. Cases of loss of memory—involving a complete loss of all recollection of what has happened to the individual in the past, and even of his own name and identity—though met with in literature, are uncommon, and are on the whole to be classed rather with diseases of the mind than with those of the body. Impairment of memory, forgetfulness, is a not infrequent result of long continued epilepsy, but in such cases the defect does not usually amount to complete oblivion of the past and of personal identity. Temporary or transient lapses of memory are perhaps not uncommon as the result of severe injuries causing sudden unconsciousness, or of sudden mental shocks, but in such cases the power of recollection, at least of the events prior to the accident or shock, soon returns after restoration to consciousness. In the case now to be described, however, the loss of memory was long continued

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[1] Paper read and patient shown at a meeting of the Glasgow Medico-Chirurgical Society held on 19th February, 1904.

(over a period of three months, during which he was under observation in the ward), and the patient was dismissed from the infirmary *without admitting* that he could remember anything in his life that occurred before the date of his being carried into the ward in a state of unconsciousness. Of course the difficulty in such a case is to be sure of the *bona fides* of the patient, and although we cannot be absolutely sure of this, it is not to be forgotten that for a long period he was under very careful and critical observation. It is well known that epilepsy may be so skilfully imitated as to deceive even an expert observer; and it is not at all impossible that we may have been deceived in the present case. But if the patient was acting during the three months he was under observation, the acting was perfect; and whether genuine or not, the report of the case, as entered in the Ward Journal, is worthy of being put upon record.

The patient, a man, aged about 30, was admitted to the Glasgow Royal Infirmary on 27th December, 1903.

Clinical note of condition on admission, by Dr. Eric Gairdner.—Patient was brought into hospital in an unconscious state by the police. The only clinical history obtained at the time was as follows:—He was walking in the street when he asked a chance bystander if he could get him some water, as he had a severe headache and felt sick and giddy. The man went to fetch some water, but when he returned he found the patient lying unconscious on the ground. The patient was admitted within half an hour after this. On admission, he was found to be quite unconscious. The abdomen was somewhat rigid; the arms and legs at one time rigid, at another time relaxed. Sometimes all the limbs would be rigid, while a little later one or other would become relaxed, the others remaining rigid. Neither side was affected more than the other, except the right side of the mouth, which twitched three or four times in the minute. An occasional twitch of the left side of the mouth was also noticed, but the twitchings on this side were neither so marked nor so frequent as on the right side.

The muscles of the neck were very rigid, causing marked arching of the neck. There was also a tendency for the head to be deviated to the left. The teeth were tightly clenched.

The patient's superficial reflexes were lost, except the conjunctival, which were present. The pupils were equal, and reacted normally. The patient's breathing was shallow, and somewhat slow—about 12 respirations per minute. There was no stertor, the respirations being perfectly noiseless.

The pulse was small, and of low tension; the frequency varied between 60 and 70. At one time the pulse could not not be felt at all.

Percussion and auscultation of the heart revealed no abnormal condition. The patient looked slightly pallid, but not cyanosed. He felt cold, and shivered. The temperature was 97·8°.

On admission, some urine was drawn off for examination. The specimen was acid, and contained neither sugar nor albumen, and no tube-casts. There were no external injuries about the head or elsewhere, and no discharge from the ears.

The patient was surrounded with hot bottles, and warmed up. He gradually came to himself sufficiently to converse. He said he remembered asking for a drink, but nothing after that. He recognised that he was in an hospital, but could not remember how he came there. He could not, and still cannot, remember either his name or address; nor whether he was at work the previous day, nor what he usually worked at.

He did not recognise his name when he was told, nor could he remember anything about the address when read to him, and which ultimately proved to be that of his landlady. (The address, with some other articles, was found in his pocket, written on a piece of paper torn from an exercise book; when shown the paper he did not recognise it, or anything about it.) He dimly remembers that before he became unconscious he was taken somewhere, but he does not remember where that was, nor where the attack occurred. His landlord, who was found at the address on the paper, says that during the last six months he has had several such turns as the present, but he has always managed to come to sufficiently to take himself home, where, after half a day or thereabout, he would be well again. He does not seem to have before lost his memory as on this occasion, and he ascribed those attacks to a fall from a horse some years ago.

According to his landlord, who, however, has only known him during the six months he lived in his house, he is a steady man, of regular habits, but has been out of work for seven weeks, which his friends think has preyed on his mind. He did not return to his lodgings on Saturday night, 26th December, 1903 (the night before admission), though he was seen in the vicinity, and this, his friends think, was because he was ashamed to go home, not having been at work during the week, as he had led them to suppose. As far as his friends know, he has never had any convulsive seizures, but when attacked, complains of sickness, and rapidly becomes unconscious. The patient says he remembers having a severe headache all Sunday (the day of admission), but does not remember if headache had been frequent lately or not.

29th December, 1903: Note by Dr. Lindsay Steven.—Both yesterday and to-day the patient has been the subject of careful questioning, with the result, apparently, of establishing the fact that he has lost memory of everything that occurred before he became unconscious on Sunday evening (the 27th). He vaguely remembers walking about all that day, and having a sore head, but he cannot say where he was walking, or give any further details of how he spent the time. He cannot tell, also, where he was on Saturday night, but thinks that he was in some house. He had also forgotten his name, address, and occupation. He knows them now, but says that it is only because that man—that is, his landlord—told him on Sunday night (the 27th). He spoke to his landlord on Sunday as a perfect stranger, and says that he cannot remember him even yet, and of his own knowledge he says that he cannot remember ever seeing him before. Of the various articles in his pocket he only recognises a cigarette case, and that doubtfully. A match box, a photograph, and a pawn ticket he cannot remember ever having seen before.

He does not know what his occupation was, and cannot say whether Nurse Graham's information, that he was engaged as a milkman for some weeks, is correct or not. Asked if he can read, he supposes so, but is not sure. On being asked to read a sentence, however, he does it without difficulty. Asked to write his name, he writes it at once, but with a difference in the spelling from that on the pawn ticket, and from that as given by his landlord.

30th December: Note of physical examination by Dr. Riddell.—Patient is a well built and muscular man, of good colour, and his general appearance is that of one who enjoys perfect health.

The tongue is clean and moist, and the appetite is fair.

The pupils are equal, medium, regular, and are active to light and accommodation.

The upper extremities are muscular, and present no signs of rigidity or tremor. The grasping power of both hands is good, and sensation is everywhere normal. A vermicular-like contraction of some of the fibres of the pectorals is seen on smartly tapping the front of the chest, and the *tâche cérèbrale* is well marked over the trunk.

There is no history of any disorder of sensation, except that two days ago he experienced for a short time a prickling sensation in his hands and down the outer aspects of his legs. There is nothing of this nature now present, and sensation everywhere seems to be quite normal as regards pain, temperature, and the muscular sense.

There is no atrophic or other degenerative changes noted in any of his muscles. The superficial and deep reflexes are active, and there is no ankle-clonus. There is perfect coordination of all movements of hands, arms, and legs; the gait presents nothing abnormal in its character, and Romberg's sign is absent. There is no weakness in the legs, except for a slight degree in the knees. The senses of touch, hearing, and sight were unaffected.

Ophthalmoscopic examination reveals a normal fundus.

Temperature is normal; pulse, 70.

Lungs.—The respiratory movements are free, and equal on each side. The chest is well shaped; there is no undue flattening on either side in front. Percussion reveals a resonant note all over the lung area, and on auscultation the respiratory murmur is found to be purely vesicular, and unassociated with râle or friction sound. V.R. and V.F. are of normal intensity throughout.

Heart.—There is no visible pulsation in the præcordium. The apex impulse is faintly palpable in the fifth interspace, 3 inches from the mid-sternum. The upper border of cardiac dulness is at the upper margin of the fourth rib; the right border is a quarter of an inch to the left of the mid-sternum; the left border, 3¼ inches to the left of the mid-sternum. The cardiac sounds are pure and of good quality over all the valvular area. The radial pulse is regular in force and rhythm, is of moderate tension, and numbers 70 per minute. There are no signs of degenerative changes in the peripheral vessels.

Liver.—The hepatic area of dulness is small, measuring only 1 inch in the middle line, 1¾ inch in the mid-clavicular line, and 2 inches in the vertical axillary line.

The spleen is not palpable, and presents no enlargement.

Urine is acid in reaction, amber coloured, has a slight mucoid deposit, and gives negative reactions to the tests for albumen, blood, and sugar.

Landlady's account.—The patient's landlady was seen today, and gave the following particulars:—The patient has lodged with her for six months, and up to seven weeks ago he was engaged in delivering milk in the outlying districts of the city. For these seven weeks he has been idle, and has been somewhat depressed. He has had at least one attack of unconsciousness every week, to the landlady's knowledge, since he came to live in her house six months ago. All these but one have occurred in her house, and invariably in bed, the patient being unable to be wakened in the morning. The attacks all lasted for several hours, and, apart from slight twitching of the mouth and fingers, the landlady never noticed anything else but his apparent unconsciousness. The one exception to these attacks noted above was one he had several weeks ago in the street. He was found by the police lying unconscious, but was laid in a close until he recovered, and was then brought home apparently all right. He has never shown any defect as regards memory before, but he did not know his landlady to-day, although before she went away he remarked that her face seemed familiar.

4th January, 1904.—Several observations with regard to patient's mental condition have been noted during the last few days. His memory shows no improvement, but there is no condition of alexia present. He was taken to a window of the ward and was shown a number of horses in the street, but said that he could not tell what they were. He was also shown various pieces of money, but he did not recognise these, except in the case of a penny and a sixpence which had their value printed on them. He did not recognise a half sovereign, and could not say for what it was used. Questioned as to the relative value of the pieces of money, he concluded that the penny would buy more, on account of its size and weight. He was given some cigarettes by one of the patients, but he did not know what they were, and he had to be taught how to smoke them. He evinced great wonder and astonishment when shown a watch, and he could not say what it was at all. He placed it to his ear to listen to the ticking, but he made no remark about it.

Some of the patients showed him a draught board, but he did not know what it was, and said he had never seen anything like it. The patients played a game of draughts before him, and he showed great interest in all the various moves. When the game was finished, he remarked he thought he could do that now, and thereafter he played a few games quite intelligently, and, indeed, he beat all his opponents. He was unable to say what dominoes were when shown the same, but he could count the numbers on each quite well.

5th January.—The patient was seized with a most violent headache to-night. It began shortly after 6, and continued without intermission until about 10. Fifteen grains of phenacetin and caffeine had no appreciable effect, but a sinapism to the nape of the neck and ice to the forehead seemed to give considerable relief. There was no suggestion of unconsciousness, or of any central mischief of an organic nature. There is no change in the mental condition.

7th January.—Questioned to-day with regard to things of public interest, he evinced no knowledge whatever of these. He did not know if South Africa and Japan were places, persons, or things. He has now been taught the value of different coins, and has no difficulty in giving their relative values.

He read without difficulty part of a scientific paper in one of the illustrated magazines. The most striking feature is this, that his memory for written language is intact, while that for persons, things, or incidents is lost. To-day Dr. Lindsay Steven tested the power of the patient to understand written words by giving him a paper with the following words:—"Take a drink of sodawater out of the syphon on the cabinet at the side of the bed." The patient read this, and immediately executed the various actions involved. There has been no recurrence of the headache, except to a very slight degree three nights ago, and then only for a short time. His memory in other particulars remains unchanged.

12th January.—Percussion of the skull by Dr. W. K. Hunter showed that there was greater tenderness over certain areas. Percussion was done during one of his periodic headaches. Distinctly greater tenderness existed over the right supraorbital, lateral aspect of the right frontal, and parietal regions, and over the left occipital region, than elsewhere. The sense of taste was tested by various substances, and these were readily differentiated. His sense of smell is acute and accurate, but he has no associative power to refer the characteristic odours to their various substances. Thus, he can describe one odour as being different from another, but he cannot name the substance from which the odour emanates. In conversation with Dr. Hunter, he readily appreciates the meaning of such terms as work and employment, but he has no idea of what work he himself has been engaged in.

19th January.—The patient has been allowed out for a little to-day and yesterday. He shows extraordinary interest in everything, but there is no change in the mental condition to report.

9th February (Dr. Lindsay Steven).—Since 5 A.M. to-day headache has been exceedingly severe, this being the first attack since that recorded on 12th January. He himself is inclined to attribute the headache to efforts he was making "to remember" last night. With this exception, since last note he has been very well, taking an active part in the work of the ward, but he has failed entirely to remember anything which happened before the day of his admission. A curious incident happened two days ago. Some of the patients were sitting discussing novels; the patient, who was in bed, happening to hear Marie Corelli's name mentioned, turned round and quite suddenly said, "I have a book at home called *Temporal Power*, by Marie Corelli." This is the only reference he has ever made to anything before his admission. Nurse Graham, from constant observation, is convinced that the loss of memory is real, and Dr. Riddell (resident physician) is of the same opinion. An eighth of a grain of morphia was ordered for headache.

8th March (Dr. Lindsay Steven).—Last night the patient took one of the most severe headaches he has had. It began about 6 o'clock, but did not become overpowering until about 9. From then till 4 A.M. the pain was exceedingly severe, being chiefly located in the vertex. For the first time under observation, the severity of the pain caused him to call out loudly and to toss himself about in bed. During the earlier stages of the attack, up to about 10 P.M., he was either lethargic or tossing about in bed, but he always, when spoken to, complained loudly of the pain; the crying out with the pain occurred after 10 P.M. He fell asleep about 4 A.M., and is still sleeping.

8th March.—Patient had to-night a most violent attack of headache, and when seen at 9·15 P.M. it was so severe as to cause him to writhe about in the bed, all the muscles of the body and limbs being intensely rigid, the hands clenched, and the forehead and face covered with a cold sweat. A quarter of a grain of morphia was given with absolutely no effect, and, as the paroxysms seemed to be becoming worse, an inhalation of chloroform was given with a very striking result, for he awoke within a quarter of an hour after its administration feeling almost free from pain, and with only a slight feeling of drowsiness. Two hours afterwards, he retched once or twice, but he did not become sick or vomit, and he was able to take a little milk. At 1 A.M. the pain was nearly gone, and although not asleep, he felt as if he would fall asleep very shortly.

9th March.—The patient rose from bed this evening at 5·30 to go to the bathroom, but immediately after entering it he took a "dizzy turn," and fell to the floor. He was found by the nurse, lying apparently unconscious, and was carried immediately to bed. On examination, there were no signs of twitchings or convulsive movements, and there was no marked rigidity or flaccidity of any of the limbs. Passive movements of the arms and legs were resisted, and if the thighs were supported, the legs were held out without support. There was no twitching of the lips or deviation of the eyes. The eyes were kept tightly closed, and considerable resistance was offered to the opening of them. The corneal and conjunctival reflexes were quite active, and the pupils were moderately dilated and equal. No replies were given to questions, and no response was given to stimuli of various kinds. When placed on his feet, he could stand quite well with very slight support. He refused to speak, but ultimately, on being coaxed repeatedly, he opened his eyes for a short time. He was put back to bed, and shortly thereafter became quite rational, and was able to recall his going into the bathroom. He also remembered falling. After this, his first recollection was of being asked to open his eyes, and he also had some faint recollection of being pricked with a pin, but he could not say definitely. He complained of no headache or of peculiar sensations anywhere, and within an hour of the attack he was perfectly himself again. The whole attack was strongly suggestive of hysteria. The pulse and respiration throughout remained unaltered in rhythm and type.

12th April.—Dismissed to-day to the home, his memory apparently very much as on admission, and his bodily health excellent.

Such are the notes of the case as recorded in the Ward Journal. It remains only to add that Dr. Riddell, with great patience, and by following up clues supplied by patient's landlady and employers, was able at length to trace his relatives. The story they unfolded was not to the credit of the patient, and they certainly had no belief in the genuineness of his illness. However, the information as to his antecedents, obtained after weeks of inquiry, when communicated to the patient, had only the effect of producing astonishment that such could have been the course of his previous life. It is significant that his friends had no desire that he should return to them. In the course of enquiry it was ascertained that he had been taken into the Edinburgh Royal Infirmary on one occasion in an epileptic fit, but the Ward Journal there gave no additional information, as he had only remained a day or two in the institution. The result of these investigations, of course, shook our faith in the reality of the amnesia; but even now one cannot be certain that it was not genuine. If it was a case of acting, as I have already said, the acting was perfect, both in the wards and in the presence of the Medico-Chirurgical Society. One feature against the case being genuine was the ease with which he was educated to the use of things he professed he had never seen before. It was also significant, in the same connection, that he had never forgotten how to read or to write. At the same time, except in connection with the Marie Corelli incident noted in the report, he never once gave himself away in the ward. One expected that he would suddenly, as is reported in connection with similar cases described in the literature of of mental disease, have regained his memory of the past, but this he never did. The last heard of him was that he was employed as "boots" at a hotel in a fashionable watering place.

As to the nature of the case, I can offer no opinion, except that, if genuine, it may have been the result of epilepsy. There can, I think, be no reasonable doubt as to the severity of the headaches, or as to the fact of the state of unconsciousness in which he was admitted to the infirmary. Several similar cases are recorded in Forbes Winslow's *Obscure Diseases of the Mind*, and among them examples of that very peculiar affection to which the term "double consciousness" has been applied. In the latter variety of cases, the patient passes from one state of conscious life into another and different state, and he has only memory for events which occurred in the previous similar states of consciousness. Whether the case just recorded belongs to this order of mental disease or not, I am not prepared to say, but the whole story, as completed by Dr. Riddell's enquiries into his antecedents, strongly recalls "The Strange Case of Dr. Jekyll and Mr. Hyde."

THE OPERATIVE TREATMENT OF APPENDICITIS: A SIX MONTHS' RECORD.[1]

BY PROFESSOR RIEDEL,
Geheim. Med. Rat., Director of the Surgical Clinic in Jena.

(*Translated by Henry Rutherfurd, M.B.*)

"ATTENDRE pour opérer que l'appendicite soit refroidie c'est exposer le malade à la morte." This is the heading of an article in *La Presse Médical*, 1902, No. 55 (abstract in the *Zentralbl. für Grenzgebiete*, 1903, No. 2), by the physician Dieulafoy, and in this he goes to the root of the matter with the surgeons. "The latter, unfortunately, are arranged in two opposing camps, the one party urging operation during the perityphlitic attack, the other only after its subsidence. The adherents of the latter view adduce statistics in its support, and it cannot be denied that their results are much better than those of their opponents. This, however, is only natural, inasmuch as their operations are only performed on patients who have already passed through the dangerous stage of the disease, so that they can no longer be compared with the subjects of an early operation. Especially these statistics suffer from the fact that they take no account of those cases which have succumbed to the acute inflammation. But these are just the cases which are most important, for they are mostly the results of an intoxication. Very early operation is the only means to save such cases. Every patient, accordingly, with acute perityphlitis is to be operated on at once."

Dieulafoy has evidently been present at many operations—indeed, many early operations—or he could not have formed such a sound opinion. While many of his colleagues are in the habit of withdrawing whenever the surgeon begins his work, Dieulafoy has probably often enough had the appendix before his eyes twelve to twenty-four hours from the onset of the attack; he will have seen the organ filled with pus, stretched to bursting, lying free in the abdomen, or he will have found it gangrenous though the patient was perhaps scarcely fevered. In truth, he is right in considering of no value the statistics of those surgeons who only operate after the subsidence of the attack; there is no inclusion of those cases which have died at the onset or the height of the attack, nor of those which have not been operated upon. We must know the issue in the case of all patients who have come under care for the affection.

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[1] Reproduced from the *Münchener Medizinische Wochenschrift*, 24th November, 1903, by kind permission of the auther and of the editor of that *Journal.*

For years I have regarded the early—*i.e.*, the prompt (*rechtzeitige*)—operation in appendicitis as the only real (*richtige*) treatment of this deadly disease; in writing and speech I have counselled it. The question arises, how this view has worked here in my own practice; what results have been obtained in the most recent period in an affection whose outcome depends almost entirely on the date of admission of the patient? The clinic must admit the patient in whatever condition he be; it is not responsible for the issue of the case that is brought too late. Of it can only be required that it urges with all its power the prompt handing over of the patient, in order that it may decide as to the further issue under favourable conditions.

What, then, are the recoveries and deaths in the course of (to take a simple period) the last half year? From 1st May to 1st November, 1903, there were admitted in all 89 patients. Of these there recovered, or are in process of recovery, 86; admitted with peritonitis and died, 3; in two children the abdomen was opened to make death more easy: (one patient was visited outside—operation declined because of general peritonitis); in all, 90 patients were seen.

That we have obtained such good results is, as already said, not due to the clinic but to the medical attendants. They have, in the majority, been convinced that prompt operation is the surest means to the safety of the patient. Gradually, in the course of years, the change has come about; often, unfortunately, it has been the death of a patient under conservative treatment that has brought a practitioner into the surgical camp. Sometimes there have been relapses among the practitioners because the surgeons were not of one mind, as was specially plain at the Surgical Congress of 1899. Immediately after that unfortunate discussion, an experienced physician, who in the previous summer had sent in one week five patients without delay (*rechtzeitige*) into the clinic, lost within a few days two patients under conservative treatment, because immediate operation was tabooed in Berlin. Now he loses none so long as fate does not send him a patient whose appendix, entirely free of adhesions, perforates directly into the peritoneal cavity immediately on the first purulent attack or after a few hours, which is an exceptional occurrence (1-2 per cent).

Our statistical result is no "mensonge en chiffres"—it emphatically declares the situation in which the public and the profession stand with reference to appendicitis, and shows what can be done by early, prompt operation. The following is shortly the details of the cases:—

Of the 89 patients, there were operated on in the acute condition immediately on admission 72, of whom 62 were the subject of purulent and 10 of sero-purulent processes. Seventeen patients were operated on in the interval for non-purulent appendicitis. They suffered from strictures or from appendicitis granulosa, and came to operation because of repeated mild attacks of appendicitis, or because of more or less persistent symptoms which had, on two occasions, led to the diagnosis of gastric ulcer, although the stomach was quite normal and there were no omental lesions.

Of the 62 patients with purulent conditions, in 42 the appendix was removed at one sitting, in 20 two operations were performed, so that, after the more or less extensive abscess had been opened on admission, four to six weeks later the appendix was removed. This secondary extirpation of the appendix has been found necessary in all complete operations hitherto, with certain exceptions. Only in one patient did this second operation appear to be uncalled for, inasmuch as the appendix, after a twelve months' persistence of the disease, seemed to be entirely destroyed.

A large number of patients with purulent conditions suffered from relapses (*Recidivattacken*), and were on that account immediately operated upon. Of the 3 cases admitted with perforative peritonitis who died, 1 (a 10 year old boy) was the victim of the circumstance that in this clinic he had been anæsthetised on account of clubfoot; it was supposed that the vomiting which ensued shortly thereafter was a result of the anæsthesia, and the boy was allowed to be taken home; forty-eight hours later he was brought back *in extremis*. In the second case (a girl, aged 7, admitted on the seventh day of illness), the doctor was first called on the fourth day; he hesitated, because the case was not clear, and finally sent the patient in with the diagnosis of "ileus." The third patient, unoperated on, lay for five days outside with severe symptoms, until he was brought in moribund. The fourth, not taken into the clinic, after two mild attacks without fever, developed, in a relapse, after five hours, a perforative peritonitis. The *post-mortem* showed an appendix not covered by adhesions.

The number of cases is too small to furnish us with classified results; so much, however, is plain, that we have noteworthy advances to record as compared, for instance, with the results collected by Sprengel in 1901-2. Of 516 patients operated on, there died 58, equal to 11 per cent, while I have only lost 2 out of 88 cases operated upon, equal to 2½ per cent. The results of practitioners which I obtained by request four years ago gave, for conservative treatment in 985 cases, a mortality of 12·5 per cent, or rather 14 per cent, for 17 patients were finally saved by operation. In this statement there are apparently numerous cases left out of account who died with the diagnosis of "ileus" or peritonitis, while, as a matter of fact, they had appendicitis. Numerous patients underwent relapses, which is only what could be expected after conservative treatment. One half, at least, of the cases operated on here in former times were the subject of relapses; to-day we operate on more patients who are in their first attack.

It is of interest to compare the admissions in a similar period ten and five years earlier respectively, as showing how greatly the operative treatment of appendicitis has developed in that time.

In the year 1893, from 1st May to 1st November there were admitted 4 patients; of these there died 1 woman, unoperated on, a quarter of an hour after admission; 3 recovered. In the year 1898 there were admitted 20 patients; 7 recovered, 3 died—1 of perforative peritonitis, 1 of septic pneumonia after successful but delayed extirpation of an appendix with apical perforation, 1 of pulmonary embolism following thrombosis of the right femoral vein which had been for four weeks pressed upon by an abscess in the iliac fossa.

In spite of the small number of cases in the year 1893 (in all 6, with 2 deaths), it was decisive for me in regard to the treatment of appendicitis.

On 7th October, 1893, I removed, for the first time by incision into the free peritoneum, an appendix perforated at its tip, and in May, 1894, occurred my second case, where the appendix, obliterated in its proximal part, had perforated at the base of its distal portion. The conditions were favourable. There was no concretion; the appendix lay beside Poupart's ligament.

Intermediate operation.—In July of the same year there had already been extirpated an appendix obliterated in its distal part, perforated in the proximal, lying to the inner side of the cæcum, also without concretion. In July, 1895, the first appendix with a concretion, lying internal to the cæcum, was removed; its apex perforated three weeks after a sudden onset of illness. In the following year success attended the removal of a perforated appendix lying among loops of bowel; round about it was an accumulation of putrid thickened pus.

All these cases were the subject of more or less intermediate operations; their happy issue, however, suggested that the same operation done early at the very onset of the attack would have had similarly favourable results. Repeatedly patients were operated on two to five days after the onset of inflammation, but the real early operation that was being sought for was only done on 18th April, 1897, by an incision through the rectus, eighteen hours after the attack, which began with a temperature of 39° C. The peritoneal cavity was opened, and some loops of small intestine exposed; behind them lay a putrid abscess, the size of a walnut, into which the perforated end of the mesially pointing appendix projected. The abscess was wiped out, the appendix, with concretion, removed, and a tube enveloped in gauze introduced into the abscess; this was followed by prompt healing.

With this case we had evidence that recently-produced pus can, without ill effect, be removed from the peritoneal cavity, despite the earlier belief that it was only permissible to open abscesses extraperitoneally. It was supposed that the pus found within the abdomen must have worked its way to the abdominal wall, and the abscess have formed adhesions to the abdominal wall before it could be incised. Sometimes a long time was spent in waiting in order that this adhesion might take place securely; apical perforation in the true pelvis was a special reason for waiting. Several days might elapse before the pus appeared above the brim of the pelvis at Poupart's ligament. It is no wonder that, meantime, often enough the abscess between the intestinal loops gave way on its abdominal aspect, and found its way into the open peritoneum.

This dangerous waiting—I, myself, had no occasion to exercise it—was now no longer required, whether the pus was intra- or extra-abdominal. How, then, are we to explain the fact that the sensitive peritoneum, which, in other circumstances, reacts with the acutest inflammation to the slightest infection, is in this case so insensitive? In every case where intra-abdominal abscesses are opened the surrounding loops of bowel are befouled with putrid pus, and yet there results no peritonitis. This is to be explained by the fact that in the immediate neighbourhood of the already developed appendicitic inflammation the absorptive power of the peritoneum has been diminished or abolished. The endothelia have undergone alteration, the stomata between them are wanting, and for this reason no cocci are taken up. It is not the powerful absorption of the peritoneum which protects the patient from peritonitis, as has been so widely believed, but the diminished or abolished absorptive power of the peritoneum, inflamed in patches, and thereby altered, which saves him.

This alteration of the peritoneum is the natural means of protection of the organism against infection; but it is our business to take care that things do not go so far as the production of infective pus—my object is to operate before the pus-containing or gangrenous appendix perforates, that is, before abscess forms. Thus, we can remove the very *causa morbi* at the beginning of the illness, and that easily and quickly, but this means operation within the first twelve to forty-eight hours. It happens often enough within twelve hours that this appendix is perforated, but we have then a small abscess to deal with; this we can open in the peritoneal cavity, and wipe out while we remove the appendix. Should the abscess have reached the size of the fist, I always operate in two sittings, attempt to reach the abscess extra-peritoneally, and almost without exception attempt the intra-peritoneal extirpation of the appendix, inasmuch as experience has shown that only very rarely is the whole appendix gangrenous, and at the same time its connection with the cæcum heals spontaneously.

As recently the patients have been brought in always in the earlier stages, I have found less necessity for the operation in two stages, and always greater ease in removing the appendix at the first operation. There have not been wanting neglected cases in which the two typical incisions were required (right and left above Poupart's ligament), because the pus, after apical perforation in the wall of the true pelvis on the left side, had found its way upwards as far as Poupart's ligament. Others required a third incision in the middle line. Life was endangered, but we succeeded in preserving it.

In future we must do more; purulent and specially neglected cases, with large abscesses in the abdomen, must become more and more rare. Even then many a patient in an outlying village will die early or late of perforative peritonitis. From certain thickly populated districts at some distance round about Jena we still get few patients, while others send us a large number. I calculate that the 89 patients admitted come from a population of 250,000. Jena, with the adjoining

Wenigen Jena, has a population of 32,000; it supplies, in comparison with the rest of this area, the largest number of cases. If the other districts were to bring in their patients in similar manner we would have to do with at least double the number.

That this does not happen is due to two circumstances—one is the ignorance of the general public as to the onset of the disease. Thus, the doctor is often called in comparatively late. Suppose he finds a patient already very ill, he will hesitate to submit him to removal. Further, Nature- (Faith-) healing comes into play, with its sad results, in Thuringia; it is quite a good thing for healthy people who eat and drink too much, but quite unsuitable for those who are ill, least of all for the subjects of acute, serious, and dangerous diseases. Fear of operation is of less importance if the doctor judiciously explains the anatomical situation. Exceptions do occur, but, in general, the operation has quickly obtained popular approval.

Fear of imminent death causes the patient forthwith to submit to operation. All diseases that may cause death within a few days induce fear; anything that steals gradually on men makes no impression. We need not refer to the fact that here in this country, almost all women with cancer of the breast come too late under surgical treatment, and therefore die in a few years; while, by timeous operation, they might have made lasting recoveries. Just as little will gall-stone patients be put about by the fact that, up to this date, I have seen 58 patients die with gall-bladder cancer; these cancers had all developed as a result of gall-stones. By timeous removal of the gall-stones, which was possible in at least a number of the cases, the cancer could have been avoided. This gall-bladder cancer has killed more of my patients than appendicitis, in spite of the indifference to gall-stones and the fear of appendicitis; the former disease kills slowly, the latter quickly.

If the death-rate is to be still further reduced, the first necessity is for the general public to be better informed as to the first indications of the disease, and, secondly, provision must be made for suitable means of transport.

It is easily understood that the mother of a large family does not immediately send for the doctor when a boy complains of pain in the belly. It is often enough due to some error in diet, especially the taking of too much food. If this leads to vomiting, then the patient ought to be all right again as soon as he has got rid of what he has eaten. Should he complain further of pain in the upper part of the belly after he has vomited, the matter has become more serious. The illness begins in a very large number of cases with stomach pain; later, after six to twelve hours, the pain localises itself below and to the right. Should diarrhœa appear, this may reassure one somewhat—the patient has probably catarrh of the colon. In my experience, only about 25 per cent take ill with diarrhœa; the majority have constipation; many even have normal movements of the bowels.

It is to be remembered that many infectious diseases, specially pneumonia, set in with vomiting; the same of erysipelas proceeding from some small wound; that also typhus (typhoid) may set in with vomiting; more rarely, measles, scarlet fever, chicken-pox, &c. In these cases, however, severe pains in the belly are rare, and specially the pain in the right side of the belly is wanting. This, however, may be present when there lies in that situation an appendix the subject of chronic disease, which is now called into activity by one of the diseases already mentioned, or by influenza, malaria, angina, tonsillitis, &c. Most deceptive of all are the cases of central pneumonia; when they set in with vomiting, they may also lead to swelling of the abdomen and to appearances of acute obstruction. A few years ago, I declined to do laparotomy for ileus because, in spite of the profuse vomiting, there were no peristaltic movements seen in the belly; it could only be vomiting of inflammatory origin, but the cause of the inflammation was not to be found; in a few days, a pneumonia was made out. In the second line stands enteric ("typhus"). Especially when a patient carries about with him a diseased appendix, and now takes enteric fever, he will complain of pain below on the right side, and then develop a swelling in that situation which will be taken for a thickened appendix, while, as a matter of fact, it consists of swollen lymphatic glands. Very often torsion of the bowel is diagnosed when appendicitis exists. In women and girls, ovaritis and salpingitis are to be thought of.

Mistakes in diagnosis are possible; this must be granted, but how seldom they are—how seldom do the infectious diseases which have been mentioned actually begin with vomiting! Most to be feared is the acute febrile catarrhal colitis, but the patients have not the feeling of oppression in the belly; they do not feel so wretched as in appendicitis when the latter causes rather high fever. In case of doubt, a person who has taken acutely ill with belly-pains and vomiting, and in whom this belly-pain has become localised to the right lower part of the abdomen in the course of twelve hours, has most probably an appendicitis. As the doctor in attendance, I should order the removal of such a patient, male or female, to the clinic, as has often been done here in this town. Due provision must also be made for such prompt removal of cases at a distance in the country.

The word transport suggests at this day, first the railway, then some wheeled vehicle; the litter (carriage by bearers) is quite lost sight of. Only in the mountainous parts, in the more restricted sense—in Switzerland, &c.—is it generally in use. Formerly many a wealthy Englishwoman had herself carried up the Gornergrat at Zermatt, and the six bearers were well enough pleased to earn their eight francs apiece for a forenoon's work. Two carried, four walked alongside; every 500 yards there was a change of bearers, and thus, on the most shockingly bad road, an ascent of 1,200 metres (4,000 feet) was accomplished. What can be done in Switzerland under exceptional difficulties of the ground is surely to be managed on our good country roads and highways. Able-bodied men are to be had in every village; what is wanting is the litter. But, as every village has its fire hose, or at all events ought to have, so it must have its comfortable litter. Numerous accidents occur in the business of agriculture and forestry. Many a man meets with a falling tree in the wood, or the kick of a horse in the field, so as to require careful removal. In case of danger from fire, old people who can no longer walk must be carried off; in short, occasions for the use of a litter are already matter of experience. To this is now added the need for prompt removal of a person acutely ill. Whoever is suddenly taken ill with inflammation of the gall-bladder from gall-stones or acute typhlitis, must be removed with as little delay as possible, be it summer or winter, in bad weather or good.

For this is wanted a light, and at the same time safe, litter with cover. All structures of iron are to be refused. Iron rusts, no matter where it is kept, whether painted or not. The litter is to be made of ash, the handle-bars must be free of knots. The sheet and cover should be made of thick grey or red sailcloth. Such litters are difficult to obtain; in any case they are dear (70 to 80 marks). Accordingly, I have got Schlag, the carpenter here, to take up the matter. He supplies the complete litter for 45 marks (£2, 5s.). It weighs, with its cover, 26 lb., which is light, and it is quite strong. To protect the sailcloth from mice, it is well to suspend the litter from two smooth rods, which are supplied with it. A linen cover is necessary to protect from dust the litter, which is to be kept in some dry place (fire station or church tower).

For long journeys, four bearers will be necessary, or six if the patient is heavy. If a railway station is within reach, the further carriage of the patient is to be arranged in a baggage wagon. The railway officials ought always to be prepared to give convenience for this. The litter in the baggage wagon will be best placed on two bags of straw or hay, so as to make the shaking of the wagon as little appreciable as possible. It need not be detailed that the patient must, according to the weather, be more or less covered with blankets and laid on mattresses. This is the business of the patient's family, not of the officials of the society. The latter have only to concern themselves with the litter and the straw cushions.

All patients with acute severe attacks of appendicitis or cholecystitis, without exception, I cause to be brought from the town to the hospital by litter, and this in order to avoid accidents in the removal. That this carrying in a litter is always necessary I cannot assert. In the matter of how best to convey a patient, we cannot speak with exactness from reports. I can only insist that, where there is a risk of pus perforating into the peritoneum, the utmost care is to be desired. The earlier the patient is moved, naturally the less is the danger. The temperature of the patient gives us no guidance; the pulse is of much greater importance. Once it has touched 100° the patient is in danger. It must also be remembered that the pulse often remains slow till shortly before the rupture. The general appearance of the patient will often be decisive. If his look is unfavourable, that of a really sick person, then he will be carried in a litter; in other cases, a more convenient means of transport may be made use of. Specially to be forbidden is the small mailcart (perambulator), in which little children are not uncommonly conveyed for miles; they reach the hospital usually in a very far gone condition. Even when no perforation has taken place on the way, the pulse takes several hours to quieten down. If a patient has to be driven from a village to the hospital, then plenty of long smooth straw is to be spread on the floor of an ordinary haycart, on the top of this a mattress, and the patient rests on a sufficiently springy bed.

The first consideration, however, is prompt removal of the sick person. The ideal of the treatment—"extirpation of the inflamed suppurating gangrenous appendix before perforation, before abscess formation"—must be attained in an ever-increasing number of cases. The earlier recognised rule, "operate in the presence of pus," may be regarded as out of date, though we often, unfortunately, operate in the presence of pus because the patients come too late to operation. The earlier the operation, the easier and simpler it is; the smaller the wound in the abdominal wall, the sounder the scar. If it is urged that the opening of the abdomen in any circumstances involves a certain risk, it is to be replied that the danger of laparotomy, as such, is in proportion to the size of the wound in the belly wall—the smaller it is, the less the danger that carriers of infection reach the abdominal cavity. For this very reason I try to keep the abdominal wound small, and operate, without exception, in fresh cases by the zigzag incision of Roux, by which the obliquus externus, obliquus internus, and transversalis are split in the direction of their fibres—that is, almost at right angles to each other. The incision into the peritoneum is not bigger than that into the peritoneum in strangulated hernia. With such a small opening one is usually able to attain one's object. Should the case present difficulties—the appendix, for instance, lying in the true pelvis—so that more room is required, the small wound can be incredibly enlarged by stretching of the peritoneum and of the slit in the obliquus internus and transversalis. Formerly I divided these muscles across their fibres in such cases, but in course of time quite abandoned this incision, after convincing myself that, by stretching the muscles, openings more than the size of the fist can be produced. By this procedure the muscles are not torn but stretched, a point which formerly I should not have thought possible.

In recent cases this stretching is usually not needed; the smallest incision suffices. The operation resembles a herniotomy for strangulated hernia. About this, too, there was long controversy. It was thought the right thing to reduce the hernia, not to operate. For twenty-one years I have reduced no strangulated hernia (by taxis); the patients have all been operated on. What has been the mortality of the operations? One patient only have I lost, of about four hundred, as result of the operation; he died four weeks later from an erysipelas (*Wundrose*). Per contra, I have lost five in whom the bowel had been burst by taxis, and still more who were brought in with gangrenous bowel. The treatment of appendicitis is going through the same stages as did formerly herniotomy. Its conservative treatment is analogous to that of the treatment of strangulated hernia by taxis, with its numerous ill-results from gangrene of the bowel by recurrence of strangulation as a result of the preservation of the sac, &c.

But just as the taxis has been gradually displaced by herniotomy with removal of the sac—that is to say, of the hernia—so will the conservative treatment of appendicitis be replaced by the operation, and early operation, in which the operation in itself is as little dangerous as herniotomy. That the disease itself may, even by most expeditious operating, lead to death, inasmuch as perforation of a non-adherent appendix takes place without warning, has already been mentioned. We will therefore always have a certain mortality to count upon in appendicitis; this, however, should not exceed 1 to 2 per cent. In herniotomy there need be no deaths, for the condition, as such, is never mortal, and erysipelas at the present day, with the aseptic (operation) wound, is scarcely known. Appendicitis is somewhat less favourable than strangulated hernia, but not markedly so, on condition that it is treated on similar lines. That not every patient is to be operated on who complains of dragging above Poupart's ligament on the right side, after violent bodily exertions, or after he has had influenza, or diphtheria, or catarrhal colitis, is to be understood. In many parts the general public is so anxious, that everyone who has a slight pain in the right side of the belly thinks he has appendicitis. He will often enough carry about with him an appendix which has been the subject of slight appendicitis granulosa, but such an appendix is not in need of immediate removal.

Where in reality an attack of appendicitis sets in, the pain is almost always intense, and false diagnoses are rare. But whoever believes that he can tell in any particular case whether there is present a purulent or non-purulent appendicitis, or whether a purulent or a gangrenous form is present, is much deceived. We are always open to the risk of removing an appendix which may only be the subject of appendicitis serosa, but chronically diseased. This does no harm to the patient; on the contrary, is of service to him. Though I said on a former occasion that, "according to the statistics of doctors, 50 per cent of the patients required no operation, because the disease ran a mild course," I did not say that I would not operate in 50 per cent of the cases. I have always operated on those patients in whom the diagnosis was assured, and will continue to do so, for I can never be sure how the disease will progress in its future course.

Appendicitis is a surgical disease; it is to be treated on the appropriate surgical principles. Therefore, increase of the white blood corpuscles is not to be waited for before operating; operation is to be done before they increase, and thus death will be an exceptional result of appendicitis.

MOVABLE DISPLACEMENTS OF THE KIDNEY.

By DAVID NEWMAN, M.D., F.F.P.S.G.,
Surgeon, Glasgow Royal Infirmary.

(*Continued from* p. 17.)

The *progress* and *symptoms* of movable kidney may now be considered. In many instances the progress is very slow, and often, indeed, the left kidney may be for a long time freely movable without giving rise to any symptoms directly referable to it. But when the organ on the right side is affected, generally, even in the mildest cases, the gastro-intestinal functions become more or less disturbed. The patient suffers from loss of appetite, flatulence, occasional sickness, vague pains in the abdomen, giddiness, faintness and languor, and is fatigued by the slightest exertion. The skin of the face in many cases becomes pale and soft, and the voice feeble. For a considerable time these may be the only symptoms, but the medical attendant finds that the patient does not respond to treatment even when carefully considered and diligently carried out. As time goes on the doctor becomes tired of the patient, and the patient dissatisfied with the doctor. She finds that rest in bed gives her relief. She seeks as much repose as possible; ere long, by her relations, and in many instances by her medical attendant also, her sufferings come to be regarded to a large extent as imaginary, and she is looked upon as a hypochondriac. Her sufferings may go on for years without the true cause being discovered, unless her medical attendant makes an abdominal examination. It is in these slowly progressive cases that the nature of the malady is most likely to be overlooked.

In women between 20 and 35 years of age the displacement is most likely to give rise to functional disturbance in a severe form, while in younger persons and in those above the ages mentioned the symptoms are less likely to be marked.

In some cases the patient accidentally discovers the swelling in the renal region, without attention having been attracted to it by painful or other sensations. When, however, she has become conscious of its presence, or has been told by her doctor that one of the kidneys is movable, it is common to find that symptoms develop which are all referred to the condition of the kidney. In this way much difficulty is created. How far the statements of the patient are to be relied upon frequently taxes the judgment of the surgeon, but in diagnosis this very fact is of importance.

In a considerable number of women over 45 years of age an abdominal examination may reveal one or both kidneys to be unduly movable without causing the patient much inconvenience. The displacement is discovered in the course of a systematic abdominal examination, but the mobility is found to consist of a simple up and down movement of the organs. Subjective symptoms may be entirely absent, so slight as not to attract the attention of the patient or medical attendant, or they may be of a local character only. In such cases, the less that is said to the patient on the subject the better. If it even be hinted that the kidney is displaced, the patient soon finds other fellow-sufferers, and, by comparing notes, much harm may be done.

In the majority of cases the patient becomes conscious, often accidentally, of the presence of a movable tumour in the abdomen, and complains of a feeling of weight and uneasiness in one or both loins. In the early stage of the disease the patient complains only of a feeling of weight or a sense of dragging, which at this period is probably the effect only of the displacement of the organ itself. Gradually the suffering becomes more acute, and the constraint upon the patient more marked, and from having simply a sense of uneasiness and discomfort, she begins to experience distinct feelings of pain, which are at first dull; they soon become gnawing, and induce continual feelings of restlessness while she is moving about, but they are relieved by rest. These feelings, induced by exercise and relieved by rest, are at first occasional. After a time—a few cases in weeks, in some in months, in others in years—the symptoms of displacement of the kidney advance, and the suffering of the patient can no longer be attributed to the mere displacement of the organ *per se.* It is when the attachments of the kidney are loosened and the movements become free that severe local pain is complained of by the patient, and this is probably due to the displacement producing congestion of the kidney, interruption to the escape of urine, traction upon the renal nerves, or dragging upon neighbouring organs.

In a large number of patients (in fully 75 per cent of my cases) symptoms which must be classed as due to gastro-intestinal disturbance were found to exist. In many instances the patient simply suffered from loss of appetite, epigastric pain, and nausea, and these discomforts were, as a rule, only present during the times that the kidney was displaced. But while in some cases the disturbance was slight, in others it was most severe—vomiting, diarrhœa, jaundice, and other symptoms of chronic or acute gastric catarrh. In many the symptoms were fully explained by the condition of the kidney, while in others it would be more reasonable to assume that the gastric disturbance and consequent emaciation, were the cause of the renal displacement, rather than the effect. When, however, in cases associated with severe gastric symptoms the discomfort of the patient is relieved by maintaining the kidney in its normal position, it is demonstrated that the movements of the kidney are either directly or indirectly to blame.

These symptoms are not caused simply by direct pressure, for we know that large tumours may exist and move freely within the abdominal cavity without causing much, if any, reflex disturbance; it is more probable that they are due to dragging upon the renal vessels and nerves. When we call to mind the rich network of sympathetic ganglia and nerves which surrounds the kidneys and suprarenal capsules, we can easily appreciate how movable displacement of the organ may lead to painful sensations extending in many directions. Thus, in movable kidney, the pain may extend to the loins, abdomen, chest, thighs, along the ureters, or it may lead, as I have just mentioned, to disturbance of function as indicated by symptoms of gastro-intestinal catarrh.

In a goodly proportion (15 per cent) of my cases, slight and occasional jaundice was noticed, seldom sufficient to cause much colouration of the skin, but recognisable by the change in the appearance of the conjunctiva and the presence of bile pigment in the urine. The appearance of this symptom was usually accompanied by an increase in the severity of the others. In respect to the presence of jaundice as an accompaniment of movable kidney, various explanations have been offered. Litten cites a case of Frerich's in which the jaundice recurred twice within two weeks, but only lasted for a few days; and he assumes that the symptom was due to temporary compression of the common bile-duct. This theory cannot explain the jaundice in many of my cases. I am more disposed to think that the obstruction to the flow of bile was caused either by catarrh of the gall-duct or by gall-stone.

In 65 per cent of the cases, the patient suffered from more or less severe pain. The pain was usually of a dull character, dragging, constantly present while the erect posture was maintained, but relieved when the patient lay down. Occasionally there was the sense of something moving, as marked as the movements of the fœtus *in utero*. The pain was usually limited to the affected side, but in many instances it extended down the legs as far as the knee, to the chest, loins, or over the abdomen. On pressure, a peculiar "sinking sensation" was experienced—as one of my male patients expressed it, "much the same as when the testicle is pressed or bruised."

Besides these constant pains, severe paroxysms may occur resembling nephritic colic. These attacks are apt to follow upon severe exertion of any kind, but especially after much walking, sudden straining, long standing, or even protracted sitting in one position, and in females they frequently occur before or during menstruation.

The next class of symptoms which demand our attention are those arising in connection with the urinary system. They depend on torsion producing one of two conditions, viz., obstruction to the escape of urine, or retardation of the blood-flow. In fourteen cases there was evidence of the former condition existing, as manifested by transitory hydronephrosis, to such an extent that the swelling could be felt by the hand. The connection between movable kidney and the periodical emptying and filling of the sac of the hydronephrosis was shown by the appearance and disappearance of the tumour, as well as by sudden suppression of urine, followed by a copious flow.

From the clinical standpoint, which is the most practical one, we may classify cases under the following heads:—

1. Those in which the displacement does not give rise to much discomfort or functional disturbance, the mobility of the organ being discovered probably by accident.
2. Those in which gastro-intestinal symptoms are pronounced, and, after a time, induce marked neurasthenia.
3. Those in which ill-defined pain, generally abdominal, but not specially referable to the renal region, is the most marked symptom.

4. Those in which the pain is distinctly renal, and is associated with—
   (*a*) Albuminuria only.
   (*b*) Albuminuria and tube-casts.
   (*c*) Hæmaturia, and in some, blood-casts.
   (*d*) Transitory hydronephrosis.
   (*e*) Pyonephrosis.
5. Those in which both local symptoms and reflex functional disturbance are marked.

While the above classification may serve as a useful one for practical purposes, it must be admitted to be imperfect—as all clinical classifications must necessarily be—in so far as there is no sharp separation of the various divisions, one class of cases merging imperceptibly into others. But if we take typical cases of each class they will be found to form distinct centres round which the classification may be grouped.

1. *Cases in which the displacement does not give rise to much discomfort or functional disturbance, the mobility of the organ being discovered probably by accident.*

These cases require very little consideration here.

In considering the pathology of the subject (vol. lxi, p. 346), it will be remembered that I divided movable kidney into three classes, the first of which was those in which the kidney moves in its adipose capsule, the capsule itself retaining its position. Such cases probably belong to this class, or it may be the attachments of the kidney to the surrounding parts are so slight that the displacement of the organ does not cause any dragging or distortion of the neighbouring organs, generally only up and down movements being permitted. Doubtless, many such cases in this division never come within the observation of the surgeon (only 9 per cent of my cases can be included in this division), but general practitioners constantly, in their routine examinations of the abdomen, discover them, and very wisely keep the information to themselves. When the patient comes to know that the kidney is too mobile, its evil effects are liable to be over-estimated. The presence or absence of symptoms does not depend upon the amount of movement. Very mobile kidneys are often met with in cases in which the symptoms are slight; in other instances, comparatively little movement may give rise to much discomfort and disturbance of function, and this is proved by the fact that if the kidney is fixed by an operation, the patient's health is restored. While many cases may belong to this class during the early progress of the disease, they may drift by neglect into the other more serious categories.

The following cases illustrate the above statements:—

CASE VII.—*Case of symptomless movable kidney discovered by abdominal examination—Effects probably by reason of the condition being revealed to the patient—Vague but continual abdominal pain—Loss of appetite—Severe flatulence—Inability to take exercise—Cure by rest.*

Mrs. J., æt. 48, from Wigtownshire, a well-nourished and well-developed woman, consulted me on 1st November, 1898, on account of a moderately sized left femoral hernia, which caused her considerable trouble and required operation, and for which I performed a radical cure. She also suffered from a slight displacement of the uterus, endometritis, and a chronic vaginal discharge.

On making a systematic examination of the abdomen, the walls of which were normal for a woman of her age, and containing only a moderate amount of fat, I found that both kidneys were freely movable, but in an upward and downward direction only—they could not be pressed towards the middle line. Occasionally the hernia seriously troubled her, and the vaginal discharge caused her inconvenience; otherwise she enjoyed good health, and complained of few or no abdominal symptoms.

She was the mother of four children, all alive, the youngest 10 years old. It was after her last delivery that the hernia troubled her (age then 38). At that time her weight was 12½ stones, and she maintained it till two years before I saw her. In 1894 she had an attack of influenza, and thereafter she gradually lost weight until the time she consulted me, when she weighed 10¾ stones, a loss in two years of over 24 lb. When I examined her the belly was not loose. On deep inspiration, both kidneys fell well below the costal margins, and when she was in the recumbent posture they returned to their normal position on expiration, but when she stood erect both organs remained down and could be easily palpated. When down, they left an area clear to percussion in the renal region, and a slight flattening could be made out. When the kidneys were handled, the patient experienced a distinct sickening sensation, but nothing amounting to pain.

While there were no symptoms pointing to gastro-intestinal disturbance, the appetite was not very good; she was anæmic, but this was largely attributed to habitual constipation. The urine was normal in every respect, and varied little in quantity. As far as I observed, the patient appeared very quiet and placid, but the nurse told me that she was very nervous, and was controlled only in my presence, that she did not sleep well even after she had recovered from the operation, and that frequently she lost all restraint and took fancies regarding her health. Although she did not ask me, she was very anxious to know why I had made such a careful examination of her loins "although there was nothing wrong with them."

The patient made a good recovery from the operation, and the vaginal discharge was stopped, but no reference was made to the renal condition.

I did not see the patient again till January, 1902. When she entered my room, the first thing she said was, "Why did you not tell me my kidneys were movable when you examined me in the Home?" I said, "Before replying, permit me to ask you, Who told you that you have movable kidneys?" Then she told me that about a year ago she had consulted a doctor in London (a gynæcologist), and that in examining the abdomen he had found both kidneys movable, had told her of his discovery, and that since then she had suffered a great deal, and had been losing flesh rapidly. This was very obvious, as she now only weighed 9¼ stones, a loss of 21 lb. since 1898, and of 45 lb. since 1894. An abdominal examination showed the mobility to be just the same as in 1898, but the kidneys were more easily felt on account of the emaciation. The patient was now very anxious about her state of health, confessed that she had been brooding over it ever since she had been told of the condition present, and now she had a long list of ills to recite, and attributed them all to the displacement —loss of appetite and sleep, vague but almost continual abdominal pains, severe attacks of flatulence, inability to take exercise, lassitude, and want of interest in her family and friends. There were no symptoms pointing to any urinary disturbance, but now she had most of the recognised subjective symptoms of movable kidney.

From what I saw of the patient in 1898, I was certain that the mobility was not disturbing the functions of the kidney or of other organs, and I was convinced that if she had not been told about the kidney condition she would never have suspected its presence, and would have continued to enjoy reasonably good health, but when the existence of the movable kidney was disclosed, the revelation caused her distress, and she magnified her suffering greatly. The patient was anxious for an operation, but I advised her against it until the effect of complete rest, of medicinal treatment, and of careful dietary was tried for two months at least, adding the assurance that the symptoms of movable kidney were very likely to diminish as a consequence of the treatment employed. This had the desired effect, she gained weight (15 lb.), the symptoms she complained of steadily diminished, and at the end of three and a half months she was as well as when she left the Home in 1898. She then willingly admitted that her illness dated from the time she was told that the kidneys were movable.

Case VIII.—*Movable kidney causing little disturbance for years—Sudden development of acute symptoms—Operation —Complete relief.*

Mrs. I., aged 33, was admitted to the Glasgow Royal Infirmary on 3rd March, 1899. The first time the patient consulted me was at the Western Infirmary in 1891. She then suffered from occasional pain in the right lumbar region after much exertion, but with rest it soon subsided, and was not accompanied by any functional disorders.

On examination, the right kidney was found to be freely movable, but upwards and downwards only. As the displacement was causing her very little trouble, an operation was not considered necessary; an air-pad was placed over the kidney, and kept in position by a broad abdominal bandage. The patient enjoyed good health until January, 1899, when the pain became pronounced, and lately she had been the subject of severe paroxysmal attacks lasting, as a rule, for two or three days. She said that the urine had always been scanty, but she had not observed any difference in the quantity before, during, or after the paroxysms. A month before admission, she was seized during the night with severe sickness and lacerating pain in the back, and this continued for nearly a week and then gradually passed off, but had been recurring at intervals since then. On all these occasions, the sickness and pain were very acute, and resembled in character the colic of renal calculus.

The urine was free from any abnormal constituent, but generally very high in specific gravity (1025 to 1030).

The patient was well nourished, and, beyond the attacks described above, enjoyed good health. The kidney was found to be very freely movable and very tender on pressure, and now could be easily pressed to the middle line in front and down into the pelvis.

Nephrorrhaphy was performed on 15th March, and the patient dismissed well on 14th April, 1899. Reported herself cured, 3rd May, 1900.

2. *Cases in which gastro-intestinal symptoms are pronounced, and after a time may induce marked neurasthenia.* This division includes by far the greatest number of cases of movable kidney (fully 75 per cent of those which have come under my observation), and for this reason it is necessary to consider this category in detail. In many, the gastric disturbances may be part of the general condition which has predisposed to movable kidney by interfering with the nutrition of the patient and so causing general emaciation. One must therefore be very careful to guard against the possible error of mistaking the cause for the effect. When, however, we find that pressure on, or movement of, the affected kidney causes sickness, nausea, or vomiting, and that these symptoms are at once relieved by complete rest, we cannot help seeing that there is some connection between the abnormal condition of the kidney and the functional disturbances of the abdominal organs. Many attempts have been made to explain the relationship between the gastro-intestinal symptoms and the displacement of the kidney. The disorders of digestion, the distension of the bowel and stomach, the sickness and the vomiting, have all been attributed to reflex disturbance of the nervous system from dragging upon the renal nerve.

The neurotic symptoms are manifested by hyperæsthesia, acute neuralgia, and in a few by what may be included under the term "reflex cramp." In many the abdomen is extremely sensitive to touch, and when the kidney is manipulated even gently the patient complains of pain out of all proportion to the force used. This pain is increased by movement, by standing in the erect posture, but when the patient is kept in bed for a few days hyperæsthesia becomes less marked. A careful distinction must be made between spontaneous pain and pain induced by pressure in the renal region. The former as well as the latter are influenced by rest. Spontaneous pain varies in character, but is usually dull and associated with a "sinking sensation." It extends in various directions, but is most marked in the renal region. It may extend to the symphysis pubis, to the knees, and even upwards to the chest, and may sometimes be mistaken for pain of hepatic origin in extending to the left shoulder. While hyperæsthesia is comparatively common, in a few instances I have noticed more or less anæsthesia in certain parts. The following is an illustration of this category of cases:—

Case IX.—*Old-standing case of movable right kidney—Marked gastro-intestinal symptoms—Severe renal pain—General abdominal hyperæsthesia, with anæsthesia of small area of abdominal wall—After operation, considerable improvement in general health, and disappearance of neurotic symptoms.*

A. C., aged 38, was admitted into the Glasgow Royal Infirmary on 6th January, 1902. She was a thin, ill-nourished, and highly neurotic woman. The history she gave was as follows:—

Eleven years prior to admission, the patient was exerting herself greatly by running up a hill. The night following, she was seized by what she described as an agonising pain in the small of the back, and this pain troubled her for several years, always coming on after exertion and during the menstrual periods. She consulted several doctors, and was told that she had displacement of the uterus and of the right ovary. For this she wore a pessary for about two years, which gave her some relief, but she never enjoyed good health, the pain described above continuing, although not so severe as formerly. About three years ago, she became conscious of "something moving in her right loin," and this has continued ever since, and has frequently caused her to feel faint. Since the sensation just mentioned appeared, she has been subject to attacks of indigestion, shown by severe flatulence, constipation, giddiness, ringing in the ears, and severe headaches. She never observed anything wrong with the urine, except that occasionally the quantities passed were extremely large. This was always accompanied or preceded by severe pain in the right loin, but neither she nor her medical attendant noticed any enlargement of the kidney on the affected side, nor was the pain preceded by a sudden diminution in the excretion. The family history revealed nothing of importance.

Condition on admission. The patient is pale and thin, very nervous, and easily upset. The thoracic organs are normal. On palpation of the abdomen, the right kidney is found to be freely movable. It moves downwards almost into the iliac region, and when the patient lies upon her left side it falls towards and within an inch of the umbilicus, and when the slightest pressure is made upon the organ the patient complains of great pain and of what she describes as "a sickening, faintish feeling." The most marked feature is the extreme sensitiveness of the abdominal wall to touch, and this is especially so when a spot midway between the ensiform cartilage and the umbilicus is touched. At this point, the pulsation of the aorta is very marked, but when the patient is placed under an anæsthetic the pulsation subsides considerably. The sensitiveness of the abdominal wall was so great that it was impossible to make an examination by palpation without the use of an anæsthetic. On testing the surface sensation, there was an area immediately above Poupart's ligament which showed a considerable degree of anæsthesia. This area was triangular in form, the base of the triangle being Poupart's ligament, the internal limit corresponded to a line drawn between the symphysis pubis and a point an inch below the umbilicus, the external limit to a line between the above-mentioned point and the anterior spinous process of the ilium. But while in this area sensation was impaired, the abdominal wall above it was very highly sensitive to touch, even when the patient was warned that an examination was to be made. As far as could be ascertained by physical examination, the abdominal and pelvic organs were strictly normal. Nephrorrhaphy was performed on 15th January. The kidney was found to be very small in size, measuring three inches by one by three-quarters. The cortex was very pale in colour, and the fibrous capsule was firmly adherent. The adipose capsule was entirely wanting, there being no fat interposed either between the abdominal wall and the ligamentum suspensorium renis or between it and the surface of the kidney. The fibrous capsule was separated from the kidney; it was stitched to the parietes, and sutures were also passed from the cortex of the kidney. The patient was dismissed well on 25th February following. She has reported herself at regular intervals since she left the hospital, and states that she is now enjoying much better health than formerly, and it has been noticed within the last six months that she is much less neurotic than formerly. The hyperæsthesia and anæsthesia have disappeared.

Various explanations have been offered of these so-called neurotic phenomena. Rollit attributes the symptoms partly to pressure upon the abdominal organs and partly to traction on the renal nerves. The latter is the most likely explanation of purely neurotic symptoms, such as anæsthesia, paræsthesia, and hyperæsthesia, and this is supported by the fact that the most marked instances of neurosis are in cases where the displacement of the kidney can in no way cause serious pressure upon abdominal organs, and, at the same time, fixing the kidney causes disappearance of the symptoms just referred to. Sometimes, but in very rare cases, one may be misled by the position of the area of the greatest intensity of pain. I have seen two instances where the pain over the region of the right ovary was so severe and persistent that the medical attendant suspected ovarian rather than renal disease, and many instances have come under my notice where the pains have been mistaken for that of appendicitis. While the purely neurotic symptoms are the source of much unhappiness and discomfort to the patient, they are not so serious as the gastro-intestinal disorders. The sense of weight and feeling of fulness experienced after partaking of food, the difficulty in digestion, loss of appetite and disgust for food, cause serious interference with the health, and in order that the patient may be reasonably nourished, it is found necessary to keep her in bed. It has been supposed that the displacement of the right kidney brought the organ in contact with the duodenum so as to compress it, or, by inducing spasmodic stricture of the pylorus, to cause dilatation of the stomach. It is difficult to understand how the kidney can possibly press with so much force upon the duodenum in an upward or forward direction. Kendal Frank's explanation that the duodenum is dragged downwards and kinked by descent of the organ is more acceptable, but this presupposes that adhesions have formed between the capsule of the kidney and the organs within the abdomen, or that the form of movable kidney belongs to the second or third divisions made by me in discussing the pathology of the subject (vol. lxi, p. 346): that is to say, cases where not only the kidney is movable within its capsule, but the capsule itself also has become displaced, or while the capsule and the kidney are adherent to the duodenum and intestine, their attachments to the posterior abdominal wall have become relaxed.

Kendal Frank classifies the symptoms of movable kidney in three groups—(1) Those symptoms which are common to both right and left movable kidney; (2) those symptoms which belong exclusively to the mobility of the right kidney; and (3) those symptoms which may be found when the left kidney is mobile.

In the second group he includes the symptoms now under consideration, and which are recognised under the term gastric crises, and he explains the etiology in the following way:—

"In many cases when the kidney slips, its attachment to the duodenum may be so slight and lax, or the surface in contact with the duodenum may be so small, that the kidney disengages itself from the duodenum, and may become freely movable in the abdomen, without in any way interfering with the gut. Under such circumstances we have, what is a not uncommon experience, a freely movable kidney presenting no symptoms—a condition very difficult to explain on the usual theories laid down.

"If, on the contrary, the surface of contact between the kidney and duodenum be extensive, when the kidney loses its usual support and begins to descend behind the peritoneum it gradually drags the duodenum with it, and, as in the instance in which I had the good fortune to observe what occurred, the duodenum kinks, and the temporary condition is induced very similar in its symptoms to what we find in stricture of the pyloric end of the stomach. This view is further strengthened by the fact that marked dilatation of the stomach is found in some of these cases.

"These gastric symptoms, I believe, are not found when the left kidney is alone at fault."

On the other hand, Muller Warnek believes that the kidney when it becomes displaced presses against the perpendicular portion of the duodenum which, being firmly fixed by its mesentery, when it is pressed upon, it cannot become readily displaced, consequently its lumen becomes diminished, and a certain amount of obstruction to the escape of the contents of the stomach induced. This stoppage or obstruction, he believes, gives rise sooner or later to gastric catarrh or even sacculated expansion of the fundus of the stomach. The accumulated contents undergo fermentation, and all symptoms of pyloric constriction follow. I have seen several instances where marked dilatation of the stomach has been associated with movable kidney, and in three instances the disease was mistaken for stricture of the pylorus, and in one the patient was recommended by a well-known surgeon to have an operation performed upon the stomach; but this is not to be wondered at, seeing that in forty cases of dilatation of the stomach observed by Litten, twenty-two also suffered from misplaced kidney (page 7). In these instances, I felt convinced that the distortion of the duodenum was not due to pressure by the kidney upon the first part of the intestine, but rather to the dragging of adhesions. Warnek's theory has been supported by Malbranc, who considers that he has been able to verify the views by clinical observation.

CASE X.—*Movable right kidney associated with chronic dilatation of the stomach and marked gastro-intestinal disturbance—Symptoms relieved by operation.*

Miss D., aged 33, consulted me in June, 1903. She was ill-nourished, pale, and in very poor health. She stated that in 1898 she fell going downstairs, by slipping on a stair-rod which was loose, the edge of a step coming in contact with her right loin. At that time she was well-nourished, although she suffered from occasional attacks of bronchitis. Soon after the injury she began to experience pain in the right renal region, but while the suffering was never very severe, she was seldom free from it, except when at rest. The pain was not at first attended by any digestive disturbance, but early in 1899 she began to complain of constipation, vague abdominal pains, and frequent attacks of flatulence, and within the last eighteen months, at first occasional, but subsequently frequent, attacks of vomiting, the vomited matter consisting of undigested food. Sometimes the attacks of vomiting were followed by diarrhœa and the presence of large quantities of bile pigment in the urine. When I saw the patient for the first time, the stomach was greatly distended and contained a considerable quantity of gas and fluid, and she complained of distinctly localised pain in the epigastric region, immediately below the ensiform cartilage, also pain in the back, in the middle line between the sixth and eighth dorsal vertebræ. This pain was sometimes very intense, burning or stabbing, sometimes spasmodic or colicky. It usually came on shortly after meals, about twenty minutes to half an hour, but sometimes it was delayed for a longer time, especially if the patient lay down after taking food. It lasted for several hours, and when severe usually was relieved only by vomiting.

When the patient first came under my treatment, she was unable to take more than small quantities of food in the simplest form; anything beyond milk diet and soup jellies was almost certain to bring on the symptoms described above. The right kidney was found to be freely movable. It could be moved towards the middle line, but not quite to it, pushed down into the pelvis, upwards under the edge of the liver, but generally it lay under the right costal margins, about an inch and a half from the middle line in front. The stomach was so much dilated that before considering the question of an operation upon the kidney, it was considered advisable to wash out the stomach regularly with a syphon. This treatment was followed out for six weeks, and the patient was kept in bed. At the end of that time, she was able to take a reasonable amount of food, and had gained weight, but whenever she assumed the erect posture for any length of time the old symptoms recurred. In September, the kidney was explored and found to be moderately enlarged, of a deep, chocolate colour, the fibrous capsule was slightly adherent, and the adipose capsule was considerably diminished in amount. The organ was fixed in the usual way, the patient made a good recovery, and when seen last in April, 1904, she had regained weight and was enjoying comparatively good health. The digestive functions were improved, the pain had disappeared, and vomiting ceased.

3. *Those in which ill-defined pain, generally abdominal, but not specially referable to the renal region, is the most marked symptom.*

This group is a large one, and probably would be still larger, were it not that movable kidney is not thought of or searched for as a cause of the suffering. The patients are usually young women, from 25 to a little over 30 years of age, who have lost weight, and have suffered from imperfect health, but have no symptoms pointing to any definite disease. The pain is seldom or never severe. The point from which it seems to radiate is halfway between the lower end of the sternum and the umbilicus, but there is no tenderness on pressure at the epigastrium, so often observed in the pains of gastric disorders. In this group, the pain does not in any way resemble renal colic, not being due to obstruction to the escape of urine, but rather to be attributed to traction on the nerves supplying the kidney or to pressure upon those lying close to it. The pain is generally dull, and may amount rather to what the patient describes as an "unendurable sense of weakness" in the abdomen and a "tired feeling in the back." The pain often extends down the thighs, and is not infrequently mistaken for "sciatica" or "lumbago," or may be attributed to "rheumatism of the muscles" or "disease of the hip-joint." The pain, however, is not limited to the sciatic nerve, but extends occasionally in the course of the anterior crural. It is unattended with pain on pressure of the nerve trunks, and is accompanied by frequent desire to micturate. The pain is not influenced by exposure to damp or cold, nor is it increased by pressure over the painful part. There is no loss of motor power, nor is there atrophy of muscles. It is increased by exercise, and relieved by rest—especially in bed. It is not prone to exacerbations during the night, nor is it increased by standing or pressure over the hip-joint. From time to time there may be digestive disturbance, especially if the patient has been taking much exercise of a rough kind. While the pain varies from day to day, there are intervals of rest and complete comfort. During the time that the pain is most severe, there may be a feeling of nausea, the pulse is not affected, the temperature is unaltered, while, after the attack passes away, there may be a sense of utter prostration. Medicinal treatment may relieve any digestive disorders when carried out along with rest in bed, and the pain may pass away, but as soon as the patient begins to move about again, the old troubles all return. This occurs time after time. The patient loses courage, and, thinking that no one "understands her complaint," she becomes resigned to her fate, and goes on suffering until the renal condition is revealed and an operation performed. The following case is a typical illustration of this particular class:—

CASE XI.—*Movable right kidney—Sickness and severe general abdominal pain during four years—Later, pain in right renal region—Cure by operation.*

Mrs. M., aged 29, was admitted to the Glasgow Royal Infirmary on 5th October, 1900. She was moderately well nourished. She stated that her illness commenced four years prior to admission, when she began to suffer from pain on the right side of the abdomen in front, and extending to the opposite side and down the thigh. This pain was so severe at times that it caused her to double herself up, and frequently to faint. At the same time, she had a distinct feeling of sickness and an inclination to vomit. These attacks came on about once a month, and generally in the mornings when she got out of bed, but during the last eleven months they have occurred as frequently as once a week. These pains did not extend to the renal region until about two months prior to admission. She then began to complain of a dragging pain in the back, which from that time has been almost always present more or less; also, she observed that the quantities of urine vary considerably, sometimes being very small, at other times very large in quantity. She herself discovered a swelling in the right iliac region, and she recognised that pressure upon this swelling induced the pain of which she complained. The right kidney was found to be freely movable on the right side of the abdomen, above and to the inner side of the anterior superior iliac spine, but it did not readily slip into the loin, being more inclined to pass directly upwards. Even when the patient was lying on her back, the kidney was found to lie immediately behind the anterior abdominal wall, usually at a point about midway between the anterior superior spinous process and the umbilicus. Nephrorrhaphy was performed on 12th September, 1900, and the patient was dismissed well on 5th October.

In this case, till within two months of the operation, the pain was not specially referable to the renal region, and when it became so it was coincident with symptoms of obstruction to the urinary flow. At the operation, considerable difficulty was experienced in laying hold of the kidney through the lumbar incision, and it was found to be firmly adherent to the mesocolon. It was enlarged in size, and the pelvis was considerably dilated. The adipose capsule was movable along with the kidney.

(*To be continued.*)

Obituary.

SIR WILLIAM MITCHELL BANKS, M.D., F.R.C.S., J.P.

We regret to have to record the recent death, from angina pectoris, of Sir William Mitchell Banks, M.D., at the comparatively early age of 62. The deceased was born in 1842, and was the son of Mr. Peter S. Banks, an Edinburgh solicitor, and of his wife, Elizabeth, daughter of Mr. John Elliott, a Liverpool merchant. He was educated in the Edinburgh Academy and the University, where he graduated M.D., with honours, in 1864. He was for two years demonstrator of anatomy in the University of Glasgow, after which he settled in Liverpool. Here he took up surgery, while retaining his anatomical teaching, and he soon was recognised as a skilful surgeon. His name is perhaps best associated with the operative treatment of cancer of the breast, but he contributed to the medical journals articles on different subjects connected with surgery. He was surgeon to the Liverpool Royal Infirmary, a member of the General Medical Council, and of the Council of the Royal College of Surgeons of England. He was also a J.P. for the city of Liverpool.

We are favoured with the following from the pen of one who studied under him in the old College in High Street:—

"We remember Banks in the dissecting-room of the old College. He was demonstrator of anatomy under Allen Thomson in 1866 and 1867. He can only have been 24 when he came from Edinburgh to us, but we lads respected and admired him to the full. He was frank, bright and cheerful, willing to be familiar, but his innate refinement keeping him somewhat apart from us; so, at least, we felt. He was a good teacher, for he knew his subject, and told us what he knew in plain and simple words; and when he left us to go to Liverpool, the Glasgow school was all the poorer for many a day. Everyone knows how for many years he continued the teaching of anatomy in that city, how quickly he distinguished himself as a surgeon, and how successfully he promoted the interests of his own Royal Infirmary and of University College, now the University of Liverpool.

"What manner of man he was is told in his own words. 'I feel,' he says, 'that I am always in sympathy with medical students and young doctors. I love them, because for the greater part of my life I have been teaching them and talking to them.' In his address, 'The Gentle Doctor,' referring to his old teacher, Begbie, one realises what a no less tender and sympathetic heart Banks himself had. Twice in his writings we find him resolving never to be an old man in this sense, 'All my days I have liked the company of men younger than myself. I have never felt happy with old men, and, if I live to be ninety, I don't intend to be an old man.' These words press sadly upon us as we think of him passing away at sixty-two."

DONALD MUNRO, M.D.

By the death of Dr. Donald Munro, of Pollokshaws, a prominent and familiar figure has been removed from among us. Dr. Munro was closely identified with the burgh of Pollokshaws, of the Town Council of which he was for many years a member. He also held the office of magistrate and police judge, and, at the time of his death, he was a member of the County Council of Renfrew. His controversies with the Original Secession Church brought his name prominently before the public, while in the University he was known to many successive years of medical students as assistant to the late Professor P. A. Simpson.

His death took place at the residence of his brother, Dr. Munro, of Dennistoun, whither he had gone a fortnight previously, and, following so closely on his attendance at work, it came as a surprise to all. Of striking appearance and unbending nature, the deceased will be missed by a large circle.

CURRENT TOPICS.

BRITISH MEDICAL ASSOCIATION: ANNUAL MEETING.—That many of the members of the British Medical Association looked forward to the meeting this year in Oxford was well known, and that the meeting was going to be a success in respect of numbers was abundantly evident from the crowds that beset the reception rooms, even on the day before the meeting.

The causes of the large attendance were not far to seek. Putting aside the business of the meeting, there were many inducements to spend a portion of one's scanty holiday on a visit to the historical city on the banks of the Isis. Those inducements need not be specified, but that the expectations of the visitors were fully realised, despite the unfavourable weather, was abundantly evident. Everywhere one saw little knots of sight-seers "doing" the various colleges and other buildings, and, apart from these, one might also observe dreamers passing slowly through quadrangle and cloister, saying little, but letting all that they saw sink in.

Each day was fully occupied. The sectional meetings were held in the forenoon, in the various lecture-rooms in the University museum buildings. In the afternoons and evenings there were addresses and conferring of degrees in the Sheldonian Theatre. There were, further, garden parties and conversaziones, and what with gorgeous costumes (of the male portion of the assembly) and the brilliant lights within doors, and the twinkling fairy lamps in the College gardens, a picture was presented which will fade but slowly from the remembrance of anyone so fortunate as to behold it.

In addition to the *Daily Journal*, and the cards of invitation to the various entertainments, each member received, through the kindness of the local committee, a guide-book to Oxford and its colleges. This last, with its descriptive plan and illustrations in the text, proved a veritable friend in need, and by its aid one was able to find his way through the various colleges and halls with ease, as well as to acquire profitable instruction on many points.

As regards the Addresses, the president, Dr. Collier, held a large audience in rapt attention while he sketched the rise and progress of the Oxford medical school. In so doing he enlivened the details with biographical notes on the various pioneers of the school. Of these, Radcliffe naturally stood out in relief, and the account of his passage-at-arms with Kneller was much appreciated by the listeners.

Sir William Church, Bart., president of the Royal College of Physicians of London, delivered the address on medicine. His subject was "Our Sanitary Needs, with Special Reference to the National Health." He traced the development of bacteriology, the theory of internal secretions, and the progress of tropical medicine. He then proceeded to apply the exact knowledge, based on scientific research, to preventive medicine, and discussed the problems surrounding that department of our profession.

The address on surgery, by Sir William Macewen, took the form of three communications on surgical subjects—cerebral abscess, the pudic-respiratory reflex, and ligatures and sutures. Of these, the second was expounded in a masterly way, and Sir William was followed with interest by a large audience.

The sections got through a large amount of work, in the form both of set discussions and original papers. This is not the place to give details; the reader will find them fully set forth in the pages of the *British Medical Journal.*

An interesting ceremony was the conferring of the Doctorate of Science *honoris causâ* on various distinguished physicians and surgeons. The following is the list of those who received this honour:—Professor Clifford Allbutt, Mr. Andrew Clark, Dr. J. D. Griffiths, Mr. Jonathan Hutchinson, Sir William Macewen, Sir Patrick Manson, Sir John William Moore, and Professor Osler.

In going about, one descried many faces familiar in the past in our own medical school. Of these, it was the writer's good fortune to meet Sir William M'Gregor, K.C.M.G., C.B., Commander-in-Chief and Governor of Newfoundland, and the Hon. Dr. Charles K. Mackellar, Leader of the Upper House, Sydney. Both of them referred to the happy days they had spent as residents in the Royal Infirmary in 1870-71, and it was clear that, notwithstanding the many and varied scenes they had since passed through, and taken prominent parts in, they still cherished kindly thoughts of their old school.

In concluding this brief notice we feel that we but echo the sentiments of all the visitors when we say that this year's meeting will be looked back on with unalloyed pleasure, mingled with a deep sense of gratitude to our good hosts of Oxford.

Amongst some of the Glasgow members the desirability was discussed of inviting the Council of the Association to arrange for the meeting in 1908 to be held in Glasgow.

Sanitary Institute: Congress in Glasgow.—The annual Congress of the Institute was held this year in Glasgow during the last week of July, under the presidency of Lord Blythswood. The opening meeting was held in the St. Andrew's Hall, on the evening of Monday, 25th, when the president delivered his inaugural address. After alluding to the improvement in the sanitary arrangements of the city since the last Glasgow Congress (in 1883), he referred to further improvements that were still necessary so as to have again a pure river and a pure atmosphere. Ignorance and inertia were the two great obstacles to be overcome, and in this connection he urged the importance of science teaching in the schools. In proposing a vote of thanks to Lord Blythwood for his address, the Lord Provost paid a graceful tribute to the president's many labours for improving the well-being of the people. He stated that the river was gradually becoming purer, and he hoped that the pollution of the atmosphere would soon be dealt with. He also hoped that, during their sojourn in the city, the members of the Congress would see some things in which Glasgow had fairly led the way.

On Tuesday, 26th, the sectional meetings opened in the class-rooms of the University. The work of the Congress was carried on in three sections—(1) Sanitary science and preventive medicine, (2) a conference of municipal representatives, and (3) a conference of engineers and surveyors to county and other sanitary authorities. In the first of these sections, Professor Glaister dwelt on the recent outbreak of small-pox throughout Scotland, and on the necessity for compulsory re-vaccination. In the second section, the Lord Provost read a paper on the "The Smoke Problem." In the engineers' section, Mr. Weaver, of Kensington (the president), spoke of the necessity for sanitation applying to the individual as well as to his dwelling. Mr. E. Shrapnell Smith read a paper on motor vehicles in municipal service. To avoid or minimise the dust raised by these vehicles, he recommended the use of fixing liquids during dry weather on existing macadamised roads; and that in the construction and repair of such roads the metal be impregnated, before spreading, with some cohesive liquid appropriate to the local conditions. Mr. W. Hillman followed with a paper on the "Utilisation of Destructor Residuals."

On the invitation of the Clyde Trustees, a party visited the harbour. In the evening a popular lecture on "The Care of the Eyesight" was given, at the Health Exhibition, by Dr. James Kerr.

On Wednesday, the 27th, the sections were again well attended. Papers were read on "Malaria and Consumption in the Tropics," "Infantile Mortality," "The Sanitary Condition of the Mercantile Marine," "Control of Water Supplies," "Small-pox and Sanitation." The question of school hygiene was considered by a special conference, under the presidency of Professor Edgar, St. Andrews. Dr. A. K. Chalmers read an interesting paper on "Housing and Physical Condition," and Dr. H. Wright Thomson submitted a report of an examination of the eyes of 750 Glasgow school children.

A startling paper was read by Mr. Peter Fyfe, Glasgow, at a conference of sanitary inspectors. The title of his paper was "What the People Sleep On." He found that of 3,163 beds, 2,471 were composed of common flock. Analysis of the washings of this material showed that they compared very unfavourably with average sewage.

In the afternoon there was a garden party, by the Lord Provost and Corporation, in the Botanic Gardens; and in the evening there were delivered lectures on "The Prevention of Consumption" and "The Care of the Teeth," by Sir Richard Douglas Powell, Bart., and Dr. George Cunningham respectively.

On Thursday, 28th, the subject of "Notification of Tuberculosis" engaged the attention of the members. The general feeling was that, while voluntary notification was far from perfect, compulsion was beset with many difficulties.

A women's conference on hygiene was held under the presidency of Her Grace The Duchess of Montrose, who declared that the health of the next generation depended on physical and physiological education of the school children of the present day. In the afternoon a large number of the members visited the fever hospital at Ruchill, and in the evening there was a reception and conversazione in the City Chambers.

The Congress came to a close on Friday, 29th, when papers on the treatment of sewage, industrial hygiene, and infectious diseases both in man and in the lower animals were communicated. The last of the series of lectures on health was given in the evening by Dr. Kenwood, the subject being "Healthy Houses."

At the closing general meeting the chairman (Mr. Whittaker, of London) remarked that the Congress had been a very successful one. Mr. White Wallis, the secretary, intimated that the attendance had been between 1,500 and 1,600. With reference to the municipal representatives' conference, it was stated that the attendance on the first day was quite exceptional in the history of the Congress.

As regards entertainments, the members were well catered for. On the Friday, excursions were arranged to Gareloch and Loch Lomond, and to Kilchattan Bay and Rothesay. On the Saturday, outings took place to the Trossachs, Lanark and the Falls of Clyde, Loch Eck and Loch Fyne, Campbeltown, and to the Burns' country.

By the kindness of Mr. John Lindsay, the honorary local secretary, we have been favoured with a copy of the *Souvenir Handbook of Glasgow*, issued by the Corporation to the municipal representatives attending the Congress. The *Handbook* deals with the various municipal enterprises of the city—art galleries and museums, parks, libraries, sewage, wash houses, tramways, &c. The different articles are copiously illustrated, and the volume forms a fitting souvenir of the city and its works.

R.A.M.C. (Vols.): Glasgow Companies' Camp.—The Companies went into camp at Netley during Glasgow Fair week. They left Glasgow on the evening of Friday, 16th July, in a heavy downpour of rain, and entrained at the Central Station. Major Somerville was in command, and there was a large turnout both of officers and men. Fair weather at Netley helped to make the outing most enjoyable, and enabled the members of the corps to make good use of their time off duty. In addition to the ordinary routine, there were the usual camp sports. The Glasgow men fraternised with the Aberdeen Companies, who were under canvas alongside, and altogether the camp proved a great success.

The Transport Section, under Lieut. Mackintosh, M.V.O., underwent their annual training at Portsmouth.

NEW PREPARATIONS, &c.

We have received the following from Messrs. Burroughs Wellcome & Co.:—

Tabloid Three Valerianates.—The tabloid form and sugar coating of this combination ought to remove much of the unpleasantness involved in swallowing the valerianates. The formula of the present preparation is as follows:—

Quinine Valerianate, . . .	1 gr. (0·065 gm.)
Iron Valerianate, ...	1 gr. (0·065 gm.)
Zinc Valerianate, ...	1 gr. (0·065 gm.)

Tabloid Phosphates of Iron and Strychnine.—This combination is intended for use by those patients who cannot tolerate quinine.

Soloid Mercuric Potassium Iodide.—Each soloid contains 4·37 grs., and when dissolved in 10 oz. of water, forms a solution of 1 in 1,000. This will prove a great convenience to those who are in the habit of using biniodide as an antiseptic.

Tabloid Ophthalmic, Zinc Sulphate and Cocaine Hydrochloride.—Each tabloid contains $\frac{1}{250}$ gr. of the zinc and $\frac{1}{20}$ gr. of the cocaine salt. The tabloid is intended to be placed on the conjunctiva, and is a means of prescribing an astringent painlessly.

Morphine Phosphate.—This preparation is intended to replace the acetate, than which it is said to be more stable, and to possess greater uniformity of composition.

Guaiacol Camphorate.—It is claimed for this preparation that it is less likely than others to derange the digestive organs. It is in the form of an acid salt, and is intended to pass through the stomach without change, and to become hydrolysed when brought into contact with the alkaline secretions of the intestine, where the guaiacol is liberated. Its dosage is 5 to 10 grains.

Calcium Hypophosphite.—Attention is drawn to the ready solubility of this preparation in water. Dose, 3 to 10 grs.

Podophyllin (Podophylli resina, B.P.).—This is a pure preparation, almost entirely soluble in 90 per cent alcohol. Dosage, ¼ to 1 gr.

The appearance of the above products is in accord with the traditions of this well-known firm.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1903-1904.

MEETING IX.—19TH FEBRUARY, 1904.

The President, DR. DAVID NEWMAN, *in the Chair.*

I.—CASE OF GENERAL AMNESIA ?

BY DR. J. LINDSAY STEVEN.

Dr. Lindsay Steven's paper will be found as an original article at p. 161.

II.—THREE CASES OF RENO-RENAL REFLEX PAIN: CASES IN WHICH THE SYMPTOM POINTED TO THE SOUND KIDNEY BEING THE DISEASED ONE.

BY DR. DAVID NEWMAN.

Spontaneous pain is an important symptom of renal disease when the outflow from the pelvis is in any way interfered with, and probably in no organ of the body is the suffering more acute and more varied in character than in some of the maladies affecting the kidney and the ureters. During an attack of renal colic the pain generally extends over a wide area, involving most of the abdomen and back. But, while widely distributed, it is generally most severe on the affected side between the tenth rib and the crest of the ilium. Its character and situation vary according to circumstances, and may often guide the surgeon in forming an opinion as to the nature of the lesion giving rise to the suffering. When obstruction of the ureter is present, the pain may extend down the thigh to the knee, involving all the pain areas from the tenth dorsal to the second lumbar; whereas, when a stone is impacted in the kidney, it will cause little suffering when the patient is at rest, but when he exerts himself, or is submitted to sudden jolting, pain is developed in the ninth and tenth dorsal areas. The feeling may only amount to a sense of uneasiness or discomfort; it may be a dull or gnawing pain; it may be very acute at times, and may reach a degree to be described as lacerating torture, accompanied by agonising spasms. The suffering may be of short duration, with intervals of complete freedom from pain, or it may be persistent. The less severe pains, as a rule, continue steadily in their course, and are located in one place, while the more acute pains are generally remittent, and extend over considerable and constantly varying areas. Dull persistent pain in most cases indicates a slow, steady change in the condition and bulk of the renal parenchyma, or in the size of the pelvis, as is seen in tuberculous nephritis and in tumours; on the other hand, acute suffering is due to lesions which suddenly interfere with the exit of urine from the pelvis, for example, in calculus, in tuberculous pyelitis, or ureteritis, or in obstruction from the impaction of a blood-clot. When the pain is acute, it is not always referred to the seat of the disease, but may cause spasm of the bladder, pain in the testicle, at the point of the penis, in the hip-joint, down the thighs, or the suffering may be limited to the kidney on the opposite side to the one that is the seat of the disease.

This reno-renal reflex pain has been described by Guyon and Thornton, and considerable importance has been attached to it by these writers; while, on the other hand, Morris, in his recently published book on *Surgical Diseases of the Kidney and Ureter* (vol. ii, p. 84), says:—

"It is important to know that a stone in one kidney will sometimes excite sympathetic pain and irritation in the other; but this transferred or sympathetic pain is of an aching character, not of a spasmodic or colicky description, is only occasional, and never occurs except as an accompaniment of more severe pain on the affected side.

"So far as my own experience and researches go, there is not a single case which affords satisfactory evidence of symptoms on one side only being caused by a stone in the kidney of the other side. The presence of a stone in the painless kidney is not proof that the painful opposite organ is not also affected. That the attacks on the painful side have ceased after removing a calculus from the painless kidney is not conclusive; this may be nothing more than a coincidence, due either to the accidental shifting of a calculus in the painful kidney, or to the calculus becoming lodged in some immovable manner. There may be very advanced disease of the kidney on the painful side, and a symptomless calculus in the opposite kidney. In a case which has been under my care of late there was a sarcomatous growth in the right kidney, with hæmaturia, but an entire absence of pain and tumour on the right side throughout the whole course of the disease; yet intense pain was experienced in the left renal region, radiating over the left side only. The inference would have been that this was a typical case of reno-renal reflex pain had not symptoms during the last few weeks of life, and a *post-mortem* examination, shown that the left-sided pain was due to a similar new growth involving the left transverse processes and the left side of the bodies of the lower dorsal vertebræ. I consider the doctrine of reno-renal reflex, with an absence of pain in the affected kidney, as unproved and unsound, and, if acted upon in practice, likely to lead to very serious and dangerous results."

In a communication which I published in the *Glasgow Medical Journal* (vol. lvi, No. 2, p. 103), I tried to show that my experience led me to believe that reno-renal reflex pain is a fact which must be accepted, and in proof of my opinion I cited the following cases, one under the care of Mr. A. E. Maylard, a second published by Mr. Edmund Owen, and a third which was under my own care; and, in addition to those, I have three others which demonstrated beyond doubt that reno-renal reflex pain is a fact which must be accepted. The following is from the article in the *Glasgow Medical Journal*:—

"W. I., æt. 58, consulted me on 25th May, 1899, with a history of dull pains in the left lumbar region during the last seven years, and of acute attacks of renal colic at intervals of from two to three months. These attacks were usually brought on by active exercise or by driving, and were accompanied or succeeded by hæmaturia, which usually lasted for some days after the pain passed away. The patient was sent into the Central Home, for examination during one of these attacks, and, on exploration with the cystoscope, blood was seen to flow from the *right ureter only.* This was observed on several occasions. I therefore advised exploration of the right kidney, but the patient was so convinced that the disease was on the left side that he would not consent to an operation being done."

"Mr. A. E. Maylard has kindly given me the following account of a somewhat similar case which came under his observation:—

"D. M., aged 38, had complained for six months of a 'nagging' sort of pain in the right iliac region, which seemed to him to pass upwards and lodge in his right lumbar region, where it produced a dull sickening sensation. It would linger there for twenty-four hours, causing him during the time to vomit, and making him at the end of the attack feel quite weak. He had four bad attacks of acute iliac and lumbar pain. Immediately after one of these attacks the urine was found to contain a quantity of albumen, red blood cells, but no tube-casts. In the course of a few days the urine returned to the normal. Frequency of micturition was never a symptom.

"Believing the case to be one of renal or ureteral calculus on the right side, the right kidney was explored, and a ureteral catheter passed from the pelvis of the kidney. Nothing was, however, detected. The patient had complete suppression of urine after the operation, which continued till his death on the fourth day.

"The kidneys, examined after death, showed the right one —previously explored by operation—to be healthy, and the left to contain a calculus, about the size of a pea, in one of the upper calyces (6th March, 1901)."

"A very interesting case is reported by Mr. Edmund Owen (*British Medical Journal*, 8th June, 1901, p. 1385), in which the pain was limited to the right side. The right kidney was explored with a negative result, and, at a subsequent operation, a large phosphate calculus (400 grains) was removed from the left kidney. Commenting upon the case, the author remarks:—'I am well aware that it is not a very unusual occurrence for a surgeon to operate upon the wrong kidney in his search for a stone; but I do not think that a more conspicuous instance than this, of the untrustworthiness of the subjective symptom of *pain* in renal calculus, is likely to be forthcoming. Subjective signs are proverbially untrustworthy through the whole range of surgery; but in the case of the kidneys, which have drawn their nerves blindfold from the epigastric pool, it is small wonder if, in the absence of objective signs, patient and surgeon are sometimes led by them to make mistakes.'"

CASE I.—*Pain simulating renal colic on the left side, of five years' duration—Other symptoms and signs pointing to calculus in the right kidney—Stone removed from the right kidney.*

A. M., aged 25, consulted me in July, 1900, complaining of severe pain in the left lumbar region, which had been present, more or less, since 1898. The attacks of renal colic lasted, as a rule, from three to nine hours, and were associated with suppression of urine. In the more prolonged attacks the pain extended over the whole abdomen and back, but the area of greatest intensity was in the left lumbar region. The pain generally subsided suddenly, and was followed by a copious excretion of dilute urine. Physical examination of the abdomen was difficult on account of the patient being unusually stout for her age, and muscular resistance being very marked during an attack of colic; but neither during the attacks nor in the intervals could any renal swelling be detected, and pressure over the two organs failed to reveal greater tenderness over the one than over the other. Prior to consulting me, the patient sought advice from a surgeon in London, who came to the conclusion that she was suffering from a calculus in the left kidney, and advised an operation for its removal. At the onset of the illness, the attacks of renal colic seldom occurred oftener than once in two or three months; but by midsummer, 1902, she was seldom free from gnawing pain in the lumbar region, and the attacks of renal colic were more frequent, sometimes as often as once a week, and associated with occasional hæmaturia. In the intervals between the attacks no abnormal constituent could be found in the urine, with the exception of occasional slight deposits of pus; but, during the attacks of hæmaturia, blood was found to escape from the right ureter only. No tubercle bacilli could be found. Cystoscopic examination revealed nothing abnormal in the bladder, with the exception that the mucous membrane around the right ureteral orifice was unduly injected, and the lips of the orifice ragged and projecting into the bladder. A ureter catheter was passed, and, also, an examination was made by sounding the ureters with a resonator probe. Neither from the catheterisation nor from the sounding was any definite information acquired, but the cystoscope showed the kidney from which the blood was flowing. While the pain pointed to the presence of a stone in the left kidney, the appearance of the bladder, and the circumstance that blood flowed from the right ureter only, indicated the disease to be on the right side. Repeated endeavours were made to detect the presence of a stone in the right kidney by means of Röntgen-ray photography, and, after four futile attempts, a successful photograph was obtained.

On 3rd September, 1902, I performed a nephro-lithotomy on the right kidney, and removed a stone about the size of a marble from the pelvis. The kidney was situated unusually high up, and hence considerable difficulty was experienced in extracting the stone. The patient made a good recovery, and since the operation there has been no recurrence of pain in either renal region, nor has there been any hæmaturia.

CASE II.—*Symptoms of renal calculus on right side, of over eighteen months duration—X-ray: a stone detected in left kidney—Removed, and pain on right side disappeared.*

The following note I received from Dr. Thomas Colvin:—

"J. R., aged 33, married, ironmonger, first consulted me in April, 1902, in regard to an aching sensation across the lumbar region and over both loins. He had no difficulty in micturition, nor did his urine seem to him to be abnormal in quality or quantity. He was daily at his business, and felt well, excepting this aching over the region described, and which did not at this time amount to an actual pain.

"On examination, I found his temperature and pulse normal. The urine, to the naked eye, did not suggest hæmaturia or pyuria, but on testing it was found to contain a small quantity of albumen. My diagnosis was subacute nephritis, and I prescribed rest and the usual routine treatment for that complaint. He made a good recovery, although a trace of albumen was present in his urine when he returned to business again.

"A year later (April, 1903) he again consulted me, and this time he complained of pain across the lumbar region, especially in right loin. There is not the shadow of a doubt of the pain at this time being on right side, and not on left side, for the patient, who is a shrewd business man and a most reliable observer, afterwards reminded me that among other local applications I prescribed to relieve the dull pain on the right side was a fly blister, about 3 inches square. The pain at this time had not the character or direction of that in renal colic. Whilst he had no difficulty on micturition, his urine was of a smoky tint, and, on testing it, not only albumen, but blood, also, was present. No microscopical examination was made. The question was now raised of a renal calculus on right side, and an operation even hinted at, but as the patient seemed to rapidly improve with absolute rest in bed, a milk dietary and diuretics, and was most anxious to return to business, nothing further was done.

"Two months later (2nd June) he sent for me hurriedly one morning, and said that several times during the previous night he had acute attacks of pain on right side over his right kidney, and shooting down towards his right testicle. According to his description of these attacks, they suggested to my mind renal colic, although not of such an agonising character as is often seen. His urine again contained blood. I then told him that there was no doubt that he had a calculus or calculi in the right kidney, and insisted on his seeing Dr. Newman in regard to an operation. He consulted him a few days later, and an operation on right side was recommended. The patient had, fortunately for himself, as the sequel showed, a strong objection to operative interference, so he sought the waters of Harrogate in the hope of a cure. Whilst there he consulted Dr. Grange, who also recommended an operation on the right side. On the advice of a friend, he went to London and saw Dr. Hurry Fenwick, who wrote to me that my patient had most probably right pyelitis due to calculi, and he recommended operation on right side. It is only fair to say here that the patient told Dr. Fenwick that he had been cystoscopically examined and skiagraphed, with no definite result (May, 1903). The remaining history of the case will be related by Dr. Newman. I have only to add that the case was a most instructive one to me in many ways, and among other facts deeply impressed on my mind the extreme value of the *x*-rays in renal diagnosis. I am firmly convinced that if my patient had gone to any medical man with the symptoms I have mentioned, that his advice would have been to operate on the right side. There is only one other point. Is the right kidney normal? To that question my reply would be that the *x*-rays were faithful in bringing out calculi on the left side and none on the right side. Moreover, the operation was eminently successful, and the patient is now free from all pain or discomfort, and to be absolutely certain that he will remain so I shall report the case later to Dr. Newman."

When I was asked to see the patient on 4th May, 1903, I came to the conclusion that he was suffering from a calculus in the right kidney, but to confirm the diagnosis I had an *x*-ray photograph taken, and on 11th May I examined the bladder with the cystoscope. From neither of those observations was any benefit derived. The bladder was strictly healthy, and there was nothing remarkable about the appearance of the orifice of either ureter, and the photograph failed to show any distinct shadow of a calculus. On 7th August three photographs were taken, and in one of them there was a faint indication of a shadow corresponding to the position of the pelvis of the left kidney, but as this was indistinct, no reliance was placed upon it. Again, on 12th October, other three photographs were taken, and in two of them the same shadow was found. This pointed clearly to the presence of a stone, and notwithstanding the predominance of pain upon the right side, I concluded that the stone was in the left kidney. At this time there was some pus in the urine, and, on making a cystoscopic examination, I found that it proceeded from the left kidney. This corroborated the view of the position of the calculus.

On 17th October I explored the left kidney, and found two stones, each weighing about 2 drachms. The patient made a good recovery, as indicated in Dr. Colvin's report.

CASE III.—*Pyonephrosis limited to the right kidney—Pus and albumen in urine—Pain most marked in the left lumbar region—Nephrotomy—Cure.*

A man, aged 26, consulted me first in July, 1898. He then complained of pain across the back, and extending downwards to the crest of the ilium. The history of the case showed that the first departure from health was noticed two and a half years previously. At first the pain was generally distributed over the lumbar region on both sides. As the disease advanced the pain was most marked in the region of the left kidney, and frequently limited to that part. The patient was admitted to the Central Home, where, on examination, I found that on palpation there was a distinct enlargement of the right kidney, while the left kidney could hardly be felt. On admission, the patient complained of frequent micturition; the urine was copious, pale in colour, of low specific gravity, and contained a considerable deposit of pus; the reaction was acid, and the specific gravity 1010, but no blood had ever been observed, nor had he passed gravel or stones. A cystoscopic examination showed the pus to be escaping from the right ureter only, and this was confirmed by two subsequent examinations. The patient was advised to have an operation performed, but he preferred to wait and test the effect of complete rest and medicinal treatment for three months. In November I saw the patient again, and he then told me that little benefit had been derived from the treatment prescribed, and he was now anxious to have an operation done. During the last three months the pain was almost always referred to left renal region, but as the patient was convinced by the swelling on the right side that it was the right kidney that was diseased, he consented to have an exploratory incision made. On 15th November I incised the kidney, and evacuated 10 oz. of pus, but no stone was found.

The patient made a good recovery, and when I heard from him last (October, 1902), from Cape Town, South Africa, he reported that there was no recurrence of the pain, and that the pus had disappeared from the urine entirely.

III.—CHLORIDE OF ETHYL AS A GENERAL ANÆSTHETIC IN SHORT OPERATIONS ON THE NOSE AND THROAT.

By Dr. W. S. Syme.

Since 1895, chloride of ethyl has been used with increasing frequency, first on the Continent and in America, and during the past two years in this country, as a general anæsthetic in short operations. Naturally, then, the attention of those engaged in the treatment of diseases of the throat and nose has been directed towards it. It was after reading a short article by Luke, in the *Edinburgh Medical Journal* for November last, that I determined to give it a trial, and since then I have used it in over seventy operations,[1] chiefly for enlarged tonsils and adenoids. Previously, I had used the bromide, and occasionally chloroform, and it is in comparison with these that I have formed an opinion of the value of chloride of ethyl as a general anæsthetic in short operations.

It seems to me that the ideal anæsthetic in minor operations on the throat and nose is one that will give with one inhalation, *i.e.*, without reapplying the mask, a sufficient time for a complete and thorough removal of all that is required, and at the same time with the least possible danger to the patient. From my experience with it I am satisfied that chloride of ethyl comes nearer to fulfilling these two conditions than any of the other anæsthetics. Nitrous oxide gives too short a time, and the same, in my hands, has been the case with bromide of ethyl. With this latter I could rarely get longer than one minute of available anæsthesia, and this does not give time for sponging the throat, as one would like to do after removing the tonsils, to see that the removal was sufficiently thorough.

It is in regard to the second condition—safety—that chloroform fails. Watson Williams reports twenty deaths during 1892 to 1900 in England from its use in the operation for the removal of adenoids and enlarged tonsils, and still quoting him, "Hinkel adduces evidence which tends to show that there are some special risks with chloroform anæsthesia in the subjects of lymphoid hypertrophies."

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[1] Now (September, 1904) one hundred and forty.

As with the bromide, the chloride may be given in the sitting as well as in the recumbent position. For myself, I prefer the recumbent, and I also feel that, as the sitting position does undoubtedly add a risk for the patient, the mere convenience of the operator is not sufficient excuse for this position. Even the intra-nasal operations can, with little more trouble, be performed with the patient lying down.

Of the various brands of ethyl chloride I have used two, kelene and ethyl chloride (Hedley). With kelene I at first used the inhaler recommended by the makers of the brand, but my experience with it was not satisfactory, and for the last sixty-four cases I have used a simple contrivance of my own, more simple than any I have ever seen described—and during the past few months there have been many, all, however, it has seemed to me, more or less erring on the side of elaboration. It is only necessary to bear in mind that the anæsthetic is very volatile, and also that a certain amount of air should be given with it. Because of its volatility it is most wasteful to give it on an open mask or on lint as the bromide. My own inhaler consists of a small face-piece such as used with a Clover's inhaler. The upper orifice is about three-quarters of an inch in diameter. Inside is placed a piece of lint. To cover the upper orifice, I hold a piece of lint of four thicknesses. Having sprayed in the amount of anæsthetic to be used I cover this hole with the lint. This, I find, allows the necessary admixture with the air, and the small chamber formed gets warm, and in this way the chloride of ethyl is volatilised. Lately I have added a small cage inside the mask to stretch the lint on, but this is not a necessity. As I shall show, the results with this inhaler compare favourably with those obtained with any other, both in the amount of the anæsthetic used and in the period of anæsthesia obtained. With it I have never failed to produce anæsthesia. The dose which I recommend for these operations is the same as that recommended by others, 3 to 8 c.c., according to the age of the patient. Rarely is it necessary to give more. To a great extent the administration has been experimental. I have been anxious to determine the length of available anæsthesia obtained with different amounts of the anæsthetic. My longest period was four minutes, and my shortest was thirty seconds. This was one of the earlier cases, a girl of 15, who struggled a good deal. She was given a second administration, in all 20 c.c., without untoward result. It is certain, however, that much of the anæsthetic was not inhaled, owing to her struggling.

My conclusion now is, and I have several times verified this, that it is possible to guarantee a period of complete anæsthesia up to two and a half minutes, according to the amount used. Thus, if only adenoids have to be removed and one minute is considered sufficient, this could be obtained in a child of ten by using at the most 5 c.c. If tonsillotomy and uvulotomy are also necessary 7 c.c. would give the required time. This is an advantage which, I imagine, is nót so easily obtained with the other short anæsthetics.

The induction period depends on the age of the patient and varies from a half to one minute. At the end of this time the breathing becomes noisy, the conjunctival and corneal reflexes are abolished, the eyes are fixed and the pupils dilated, and in many cases there is muscular relaxation. There is as a rule very little struggling, much less than I have seen when using the bromide. My practice is to continue the administration for another fifteen seconds, and in the majority of cases by this time there is general muscular relaxation. At anyrate I have never had any difficulty in introducing the gag, nor have I required to use a wedge. The operation is then proceeded with in the usual way. In some of my cases at the Ear Hospital a nurse has been the only assistant, which shows the small amount of struggling. Although it is not advisable to waste time, there is no necessity for undue haste. After removing the tonsils the pharynx is sponged and a thorough inspection made, and, if necessary, the tonsillotome can be used again. The adenoids are then removed, and the remnants rubbed off with the finger covered with gauze.[1] The patient is then turned face down over a bowl. My practice is then to sponge the face with cold water, which helps to cleanse and, it may be, to stop the hæmorrhage and restore consciousness. The patient is left in the recumbent position for a quarter of an hour, when he is practically recovered and fit to go home, if necessary.

For more prolonged anæsthesia I have used it in two cases of septal deflection in adults. I am bound to admit it is not so convenient as chloroform, as the mask has to be re-applied, and this stops the operation. On the other hand it was noticed that insensibility to pain lasted longer than unconsciousness. However, I do not think that, with the present methods of administration, it is satisfactory for longer operations on the nose. It may be possible to give it by a tube passed through the other nostril or by the mouth, and when opportunity arises I intend to give this method a trial.

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[1] As recommended by Downie.

The effect of the anæsthetic on the pulse is to reduce it both in strength and frequency, and the breathing also becomes slower. This is the case in short administrations of which I am now speaking. In prolonged administration the pulse is said to become stronger again, but of this I cannot speak from experience. I have had no serious cause for anxiety. If the patient should become cyanosed, either from inhaling the anæsthetic in too concentrated a form or from the tongue falling back, it is only necessary to pull that organ forward. So far as I have been able to find, only three deaths have been recorded during its use, and the mortality is given by Luke as 1 in 16,000, and of the bromide as 1 in 4,000, though this latter is higher than that given by other authorities. Probably 1 in 8,000, or double that of the chloride, would be nearer the mark; so that, in the matter of safety, chloride of ethyl comes next to nitrous oxide.

To sum up, as an anæsthetic for short operations on the nose and throat chloride of ethyl has the following advantages:—

A period of anæsthesia according to requirements up to two and a half minutes may be confidently anticipated.

There is a minimum of struggling.

Next to nitrous oxide it is the safest of anæsthetics. Patients quickly recover from its effects.

There is an absence, as a rule, of troublesome after-effects; vomiting is unusual, and is of short duration when it does occur.

The following table shows the average results of sixty-four cases where my own simple inhaler has been used. As I have stated above, the earlier cases were experimental. The later cases show a better average.

Average age, ...	8½ years.
Length of administration, ...	1¼ minute.
Period of anæsthesia, ...	1¾ ,,
Amount of anæsthetic used, . . .	6¼ c.c.

REVIEWS.

Blood Immunity and Blood Relationship. By **George H. F. Nuttall**, M.A., M.D., Ph.D. Cambridge: University Press. 1904.

Those who have followed the literature of this subject within recent years have witnessed a growth and development of knowledge almost unexampled in the history of biological and medical science, and the publication of this work will give to those who are not experts some idea of what has been done in one department. From the nature of the subject, our notice must be rather descriptive than critical, and we shall chiefly attempt to give an account of the contents of the volume. The work deals with *precipitins*, which belong to the group of anti-bodies or anti-substances. The fundamental fact is that when the serum of an animal of species *A* is injected into one of species *B* on several occasions, there appears in the serum of the latter a substance which forms a cloudiness or precipitate when the sera of the two species are mixed together. This substance is the precipitin, and it combines with a precipitable substance normally present in the serum used for injection. The development of precipitins corresponds with that of antitoxins, antiferments, agglutinins, hæmolysins, &c.; in fact, we may now divide organic substances into two classes, those which give rise to anti-substances, and those which do not. In Part I we have, accordingly, an account of anti-substances in general, and this may be said to be almost as clear and comprehensive as the present nature of the subject admits; many statements depend on the results of individual workers, and this fact necessarily leads to a somewhat disjointed character in the description. The statement at foot of page 28, that a normal cytolytic serum cannot be reactivated after the complement is destroyed by heat is, however, an inaccuracy.

Part II, which occupies the bulk of the book, is concerned with precipitins alone, and here we have a minute and accurate account of the whole subject. The methods of preparing precipitins are fully and carefully described, and due attention is given to the minutiæ of detail necessary for success. Rabbits are used for injection purposes, and the serum to which the precipitin is to be obtained is injected in repeated doses; it is important for comparative estimation of reactions with the sera of other animals that a strong anti-serum be obtained, as otherwise small reactions may escape notice. Amongst other subjects of interest treated, we may mention the methods of storing the anti-sera; the mode of applying the precipitin test and the sources of error; the nature of the precipitin, precipitable substance, and the resulting precipitum, &c. The precipitin apparently forms a loose chemical combination with the precipitable substance, and after the reaction is complete there remains a certain amount of each of these substances in the free condition.

The results of the application of precipitin tests come under three different heads. There is first an account of the results obtained by the author in 16,000 qualitative, or, more correctly, rough quantitative, tests with 30 different anti-sera, and a summary of these brings out an important correspondence with the generic relationships of the different orders of mammals. For example, using precipitins for the sera of man, the chimpanzee, the ourang, and the cercopithecus monkey, he found that maximum reactions were obtained only with the bloods of primates, and the degrees of reaction showed a close relationship between man and the anthropoid apes, more distant with the cercopithecidæ, and more distant still with other species of monkey; while none of the four sera gave any reaction with the blood of lemurs. This apparently confirms the generally held opinion with regard to the blood relationships of the genera amongst the primates, and points to the lemurs belonging to a distinct order. It is also interesting to note that a precipitin for the serum of the hedgehog—an animal well separated as regards phylogenetic relationship—gave maximum reactions only with the serum of this animal, whilst even slight reactions were obtained in only a few cases with the sera of other animals. We may say that generally the precipitin results harmonise wonderfully closely with those obtained by a comparative study of the structure and development of the different orders of mammals.

The second part, dealing with the application of precipitin methods, gives an account of 500 quantitative tests performed by the author and Mr. Strangeways (the results corresponding with those obtained by qualitative methods), and the third part consists of the results of the investigations of Mr. Graham-Smith in the case of the lower vertebrata and the arthropoida. Lastly, there is a full consideration of the medico-legal application of the test in identifying human blood.

Such is a mere outline of this work, and we may say that alike as regards its relationship to the great subject of anti-substances, the biological and zoological applications of the results obtained, and the bearing on an important medico-legal problem, it is one of the first importance.

The volume will no doubt become a classic on the subject, and the author is to be congratulated on having produced such an important scientific monograph—a class of work of which there are too few examples in English.

Blood-Pressure in Surgery: An Experimental and Clinical Research. The Cartwright Prize Essay for 1903. By GEORGE W. CRILE, A.M., M.D. Philadelphia and London: J. B. Lippincott Company. 1903.

THE greater part of this volume is occupied with detailed descriptions of experiments carried out on animals to determine the cause of the fall of blood-pressure in shock and collapse, as also the effect of different agents in combating these conditions. Then follows an account of the various instruments that have been invented to measure blood-pressure at the bedside; and there is also given a summary of the results so far obtained by clinical observation. Over thirty pages are next devoted to a study of the changes in the blood-pressure during surgical operations, and, finally, we have the author's argument.

The whole constitutes a most valuable contribution, and we rise from a perusal of Dr. Crile's book with a clearer insight than we ever had before into what is meant by shock and collapse. We already knew that in extensive vascular dilatation probably lay the pathology of shock, but it has been left to Crile to show us by a series of brilliant and convincing experiments that *exhaustion of the vasomotor centres* is the cause of this vascular dilatation, and the true pathology of shock. We are now enabled to understand how our treatment of this condition has been so futile in the past, and our indebtedness to Crile increases as he convincingly demonstrates to us how remedies, designed to act on the vasomotor, cardiac, and other centres of the medulla, are not only inert but harmful in extreme degrees of shock. That strychnine is of benefit in some degrees of shock we have all experienced, but it is here proved beyond doubt to be a stimulant only in the milder degrees of this condition; in the most profound degrees of shock Crile observed no result, while in the intervening degrees strychnine had but the effect of driving animals not yet in complete shock into shock of a deeper degree. Indeed, in the later part of his researches Crile found that the most convenient and most certain method of producing shock for experimental purposes was by the administration of physiological doses of strychnine, and "it would seem to be as reasonable," he says, "to treat strychnine shock by administering traumatism, as traumatic shock by strychnine."

It would appear that we have been directing all our energies along wrong lines. The point to aim at is to create a peripheral resistance, either by a drug acting on the blood-vessels themselves, or by mechanical pressure. And that we may come to be able to do so by drugs is shown by the wonderfully beneficial results obtained by the intravenous injection of adrenaline in animals in all degrees of shock. So far, however, the practicability of this remedy in man has not been established. Nevertheless, a rubber pneumatic suit has been found by this ingenious author to be both practical and efficient.

Under *collapse* Crile includes cases of sudden fall of blood-pressure from hæmorrhage, from injuries of the vasomotor centre, or from cardiac failure—a suspension of function rather than an exhaustion of centres—and here we find support for the exhibition of the stimulant remedies we are accustomed to employ.

Though it may be very difficult, or even impossible, from symptoms alone to differentiate between collapse and shock, we now see that it is most important, indeed imperative, that we try to do so, for what will benefit the one condition can only harm the other.

Crile's views supply much food for serious reflection, and we strongly advise all surgeons, and all physicians too, to make themselves acquainted with this work.

Handbook of Diseases of the Ear, for the Use of Students and Practitioners. By RICHARD LAKE, F.R.C.S.Eng. London: Baillière, Tindall & Cox. 1903.

MR. RICHARD LAKE is well known as one who has done good work in the department of otology, and this manual enhances his reputation. It is well written and illustrated, and bears evidence of independent thought and careful clinical observation. The chapters on chronic non-suppurative diseases of the middle ear, and on suppurative diseases of the middle ear, acute and chronic, and on intracranial complications, are specially good. A chapter on operations on the ear adds distinctly to the value of the book.

There is, however, in some parts a notable defect in style, which one would like to see remedied in future editions of the work, as on page 129: "The use of guttæ of various sorts is occasionally productive of good." In discussing pain as a symptom, the author writes, "Referred pain in or about the ear from diseases in neighbouring regions is occasionally met with. Especially is this so in . . . dental caries of the upper jaw." In our experience, referred pain is more common from dental caries of the *lower* jaw, especially when it involves the second and third molar teeth. This the author does not mention. These, however, are only minor points in an excellent *Handbook of Diseases of the Ear*, which we have pleasure in commending.

A Handbook of Ophthalmic Science and Practice. By HENRY E. JULER, F.R.C.S. Third Edition. London: Smith, Elder & Co. 1904.

JULER'S handbook has been a well-known and familiar text-book for the last twenty years, and the present issue has been revised, enlarged, and brought up to date. A special feature of this text-book is the beautiful and accurate coloured plates of affections of the fundus, which are of the greatest value to the student in enabling him to understand the description of the diseases, and to recognise them when he meets with them. For the purposes of diagnosis an accurate and life-like picture of the appearance is more valuable than pages of descriptive text.

Mr. Juler's text-book is well written in every sense of the word, and can be highly commended on the ground of accuracy and thoroughness. It forms a safe and trustworthy guide for the student and the practitioner in all the departments of ophthalmic practice.

We were astonished to find no mention of holocaine, an ocular anæsthetic and analgesic, which has now been in use for more than five years, and which, in many respects, is distinctly superior to cocaine. Euphthalmin, a new and useful mydriatic, though briefly mentioned in the text is not mentioned in the index. Protargol, now extensively used in disease of the conjunctiva and tear-passages, only gets two lines in the appendix and is not mentioned in the index. These are small matters in a large text-book, still we expect to find in a new edition the most recent information as regards ocular therapeutics.

The text-book is beautifully printed, and it can be recommended to the student and to the medical practitioner as a safe and eminently trustworthy guide in dealing with diseases and injuries of the eye.

Atlas of the External Diseases of the Eye, including a Brief Treatise on the Pathology and Treatment. By PROF. DR. O. HAAB. Authorised Translation from the German. Second Edition, revised by G. E. DE SCHWEINITZ, A.M., M.D. With 98 Coloured Lithographic Illustrations on 48 Plates. London: W. B. Saunders & Co. 1903.

THIS is an excellent little volume, which we have examined, not only with profit, but also with much pleasure. If the text is carefully studied, the coloured plates will be found to be very helpful to the physician or student who desires to become familiar with the external diseases of the eye. The earlier portion of the text is an admirable guide to the examination of the eye, and, indeed, the entire work deserves the highest praise.

Squint Occurring in Children: An Essay. By EDGAR A. BROWNE, F.R.C.S. Edin., assisted by EDGAR STEVENSON, M.D., M.Ch. Aberd. London: Baillière, Tindal & Cox. 1904.

THIS admirable little monograph of seventy-four pages cannot be regarded as a complete treatise on the subject, but, as indicated by the title of the essay, it is rather a lucid exposition of the views of two experienced ophthalmologists on the treatment of this affection in children. To the general practitioner and to the public, the treatment of squint sums itself up in the word operation. Very frequently, therefore, when young children begin to squint, nothing is done, as it is assumed that the child is too young for treatment, and the most valuable period for the successful non-operative method of treatment is allowed to pass. Messrs. Browne and Stevenson's essay is a splendid protest against this too common practice.

The text of their essay is that squints in the periodic stage are very curable, whereas those in the habitual stage are very difficult to cure without operation, and that treatment should be begun, no matter how young the patient may be, immediately after the first "glide of the eye."

The book is well written, and forms an admirable guide for the successful treatment of this common affection in the young.

Elementary Lectures on Errors of Refraction and their Correction. By HAROLD B. GRIMSDALE, M.B. London: The Medical Times, Limited. 1904.

THIS is a slight book, and in some respects carelessly written. We scarcely see the necessity of its being published, for there are already in circulation many other books which we consider to be better for the student. The part in which the author details his own experiences is certainly the best. He is evidently a painstaking worker, and it is always interesting to have a record of cases from anyone who is conscientious.

Diseases of the Eye. By L. WEBSTER FOX, M.D. London: Sydney Appleton. 1904.

THIS is an elementary book, but in the main it is reliable and good. The author has obviously a wide, and at the same time an accurate, knowledge of his subject, and we have no hesitation in saying that the volume may with every confidence be put in the hands of the ordinary student of ophthalmology.

Dr. Webster Fox not only shows an exceptionally wide acquaintance with the general literature of ophthalmic science, but in places, especially in his operative work, manifests praiseworthy originality. The book is clearly written and is well illustrated.

The Refraction and Motility of the Eye. By WILLIAM NORWOOD SUTER, M.D. London: Sydney Appleton. 1904.

THIS is an excellent book, written in a clear style, and replete with the latest information on the subjects dealt with. The author is evidently a sound, scholarly man who has a wide practical experience, and who has, moreover, an exceptionally good knowledge of the literature of his subject. His demonstrations, both mathematical and physical, are of the simplest, but at the same time are ample, and can be followed by any student who has the modicum of mathematical training required for the average medical preliminary examination. We know of no better book to place in the hands of a student who intends to devote his life to ophthalmic work. On the physical side of ophthalmology, it contains just the information which the beginner requires, and even advanced students and practitioners may peruse it with profit.

The author divides his subject into four parts. In the first he deals with the theory of refraction; in the second he treats of the normal eye; the third is devoted to errors of refraction, and the fourth to errors of motility.

We have no hesitation in saying that we have seldom, if ever, read a better elementary book on the physics of vision. We regret, however, to find that in speaking of prisms, Dr. Suter uses such a phrase as "bases down." It seems to us that the more correct phrase is refracting edges up, for the base of a prism is hardly a definable quantity; nor do we find it mentioned by the author in his description of a prism on pages 34 and 35 of his book.

The Care and Feeding of Children. By L. EMMETT HOLT, M.D., LL.D. With an Introduction by ERIC PRITCHARD, M.A., M.D. Oxon., M.R.C.P. Lond. Third Edition. Revised and Enlarged. London: Sydney Appleton. 1904.

THIS is an excellent little manual of 150 pages, written in catechism form, for the use of mothers and of children's nurses.

The subject-matter is divided into three parts—(1) The care of infants; (2) the feeding of children; (3) miscellaneous—dealing chiefly with the condition of the bowels, sleep, exercise, &c., and slight disturbances of health.

The only part of the book to which we would specially direct attention is the second, in so far as it deals with the artificial feeding of infants. The system of percentage modification of milk, introduced by Rotch and Holt, is now generally accepted as the most precise yet presented to the profession, and, as Dr. Pritchard in his introduction points out, has brought about a complete revolution in our ideas on the subject.

This little manual gives Holt's method as it would be adopted by the nurse at home, and there is no doubt that any intelligent nurse could perfectly well carry out the instructions given. The book, however, may be recommended very highly, not only for the use of nurses, but also for doctors who have much to do with the care of infants.

The methods advanced are not yet universally adopted in practice, and it would be wise that the physician be fully aware of what is being recommended to the nurse. There is little doubt that he would fully endorse the principles laid down. The book may therefore well serve as common ground for understanding between the physician and those actually nursing the infant.

The Nutrition of the Infant. By RALPH VINCENT, M.D.
London: Baillière, Tindall & Cox. 1904.

THIS is another of the many text-books which have been published of late on the rearing of infants. The ground covered is much the same as that of other books on the same subject. While nothing of an exceptionally new character is to be found in it, there is much evidence of the care with which it has been written.

In the first chapter, dealing with human milk, some reference is made to pathological lactation. Carter and Richmond's analyses are published in this connection, showing the composition of the mother's milk in cases where the health of the infant was not good.

In Chapter IV, where the author deals with the substitute feeding of children—reserving the term "artificial feeding" for the methods where the food mixtures are derived from products artificially prepared by manufacturers—he gives the weight of his opinion in favour of the percentage method of modifying the milk, as carried out in the "Milk Laboratory." In his practical experience, the system "has converted the most unsatisfactory part of his practice into one most satisfactory and full of interest." "Home modification," he admits, "is a practical necessity in some cases at present, though it is to be hoped that in the course of time the laboratory methods may become suitable for a larger class of patients. It must be always remembered, in reference to modification undertaken at the home of the infant, that the composition of the food mixture from day to day is essentially uncertain, and that the danger to the infant from this fact is by no means small." Theoretically, this position may be right, but books like Holt's and Pritchard's have been welcomed because they have helped to put a tolerably accurate system of home modification of milk into the hands of the physician and nurse; and in the transitional stage in which we in this country are at present, if we ever do generally adopt the American laboratory system, it seems best that the physician should, in the first place at least, make himself familiar with the fairly accurate methods of home modification of milk.

Physicians who have been in the habit at any time of dispensing their own prescriptions are best able to write them. So in this case the physician who has controlled the modification of the milk for the infant at home, according to the newer methods, will best prescribe what he wants when he does make use of the laboratory system if this becomes a common institution.

Special attention is devoted to the requirements of pure milk as judged by the bacterial standard, and other equally important subjects are fully dealt with, viz., the chemistry of infantile digestion, the diet of the infant in relation to growth and health, and the normal development of the infant.

Special chapters are also devoted to diseases of infants dependent on dietary errors, malnutrition, gastro-intestinal disorders, rickets, and scurvy; while, in a final chapter, we have the question of infant mortality dealt with, and the measures requisite for its reduction discussed.

The book will be very favourably regarded among the many published on the subject.

Lehrbuch der Geschlechtskrankheiten. By PROF. ED. LANG. Wiesbaden: J. F. Bergmann.

To those acquainted with German, this volume makes excellent reading on the contagious and inflammatory genito-urinary diseases. The chapters on the "Venerische Katarrh" and "Syphilis" are the outstanding and most interesting parts. Well written and beautifully and ingeniously illustrated, the book can be highly recommended to the profession as a first-class treatise on the subject.

Treatment is very thoroughly gone into, and we are disposed to think that it would well repay the author to have an English translation.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Experimental Arthritis and Endocarditis Produced by a Streptococcus Isolated from the Blood of a Patient suffering from Rheumatism, Endocarditis, and Chorea. By Drs. M. J. Lewis and W. P. Longcope (*Boston Medical and Surgical Journal*, 9th June, 1904).—These observers presented a report at the nineteenth annual meeting of the Association of American Physicians, held at Washington on 10th May last, to the effect that in a fatal case of rheumatism with endocarditis and chorea a streptococcus was isolated from the blood before death, which did not differ materially from the common varieties of streptococcus pyogenes in culture properties, but which, when injected intravenously in rabbits, produced very characteristic lesions. These inoculations were always followed, after an incubation period of a few days, by multiple arthritis, which usually began in the ankles. In one rabbit extensive vegetations were found on the mitral valve, while typical infarctions were seen in the spleen and kidney. The organism was believed to be the same as that described by Wassermann, Meyer, Poynton and Paine, and Ainley Walker, and regarded by them as the specific cause of rheumatic fever.

Tubercular Myocarditis: A Hæmorrhagic Form. By Guido Sotti (*Giornale della R. Academia di Medic. di Torina*, 2nd March, 1904; *Deutsche Medizinal-Zeitung*, 14th July, 1904).—Two cases are described in which a tuberculous myocarditis was found at the *post-mortem* examination. Both patients were males, the one being 73 and the other 23. It was a striking feature of both that the muscular tissue of the heart had quite a pronounced hæmorrhagic appearance. In the former case the tuberculous hæmorrhagic change was confined to isolated deposits; in the latter it was diffuse, being strewn throughout the whole tissue of that organ. In the latter case, also, a tubercular pleuritis and pericarditis were present; they had, however, no hæmorrhagic character.

Carcinoma of the Œsophagus and Aneurysm of the Aorta: Perforation. By J. Herzfeld (*Deutsche Medizinal-Zeitung*, 21st July, 1904). —At a meeting of the Berlin Medical Society held on 13th July, 1904, Dr. Hansemann gave particulars of a case in which both of the above-named conditions were present. Death took place from profuse hæmoptysis. The clinicians were in doubt as to whether œsophageal carcinoma or aneurysm of the aorta was present. The result of the autopsy was that both existed. Carcinomatous ulceration of the œsophagus led to perforation, which took place into an aortic aneurysm. The latter had its origin in a syphilitic lesion.

The Behaviour of the White Blood Corpuscles in Leukæmia. —At the same meeting, Dr. Litten submitted a contribution under this heading. He began by sketching shortly the different kinds of leucocytes found normally in the blood. He then alluded to eosinophilia. He stated that it is found in pemphigus; that the bullæ contain almost only eosinophile cells; but that if a vesicle is produced artificially, the usual elements, viz., polynuclear neutrophile cells are found; that eosinophilia is present in bronchial asthma.

Here, again, vesicles produced artificially contain only polynuclear cells. Ehrlich was of the opinion that in pemphigus, &c., positive chemiotaxis took place between the specific agent and the eosinophile cells, but that no such action took place in simple vesication; that negative chemiotaxis took place between bacteria and eosinophiles, and positive chemiotaxis between the former and polynuclear cells; and that this explains the change in the composition of the blood in leukæmia whenever an intercurrent infectious disease is superadded.

Experiments were made by causing vesication in lymphatic and myelogenous leukæmia. In the lymphatic form polynuclear varieties only were found in the vesicles, while in the myelogenous 73 per cent were polynuclear, 14 per cent eosinophile, and 12 per cent mast (large mononuclear) cells.

The pleural exudation frequently present in cases of leukæmia, and usually of a reddish colour, was likewise examined. In the myelogenous form, besides red corpuscles, all the varieties of white corpuscles previously mentioned were found. The relation which the red bear to the white shows that the presence of the red blood corpuscles is not due to hæmorrhage. These pleural exudations are to be regarded rather as specifically a part of the leukæmia than as a complication. In whatever way the different varieties of leucocytes escape from the blood, they must have found their way into the blood from the bone marrow, although amœboid movement in the case of the mast cells has been but rarely observed. The myelogenous form of leukæmia is to be regarded as an active, and the lymphatic as a passive, condition.

A certain relation would seem to exist between the skin and the bone marrow; it would seem that the skin exercises some influence over the formation of the blood. Dr. Litten, in conclusion, requests that his results as regards myelogenous leukæmia may be put to the test.

In the course of the discussion which followed, Dr. Grawitz said that he did not know what the explanation of the presence of polynuclear cells in abscesses produced artificially in lymphatic leukæmia was.

Dr. Mosse referred to observers who had noted the individual movements of mast cells and myelocytes.

Case of Morbus Cœruleus (age 18 years). By Dr. A. Gordon Gullan (*The Liverpool Medico-Chirurgical Journal*, June, 1904).—The description of a case of the above-named disease forms the substance of a paper read at the Liverpool Medical Institution on 17th December, 1903.

The patient, a watchmaker's apprentice, aged 18, came to the Stanley Hospital, Liverpool, in November, 1902, complaining of constant cough and breathlessness.

Family History.—Good; none of the members had had rheumatism, chorea, or heart disease. His home had always been comfortable.

Previous history.—At the age of 6 months his mother noticed that his nails were blue, and a little later that his face and lips had a similar colour. Being alarmed, she took the child to the Stanley Hospital. She was told that nothing could be done, but that she must keep him warm and at rest. On several occasions afterwards similar advice was given.

He has always been more or less blue, and breathless on the slightest exertion, consequently he was never able to run about or do any heavy work.

He had an attack of rheumatism when he was 8 years old, which lasted one month, and another attack last year; it was severe, and lasted about two months. Since then he says he has been more troubled with shortness of breath.

Present condition.—His face is bluish or purple in colour; the ears are large and cyanosed; the lips are also purple and thickened; the alæ of the nose are likewise somewhat thickened. His hands and feet are cold and blue, the terminal phalanges characteristically clubbed, and the nails curved.

His pulse is 86 per minute, regular in rhythm and force; the volume is small, and tension lowered.

A diffuse cardiac impulse is seen to extend over the whole of the precordium; it is specially marked in the pulmonary area. On palpation, the sternum is felt to rise with each systole, and a systolic thrill is felt at the inner part of the second left intercostal space. The apex beat is in the fifth interspace, 3¾ inches from the mid-sternal line. Superficial and deep dulness are coterminous on the left side, extending 3½ inches from the mid-sternal line. On the right side the border of deep cardiac dulness is 2½ inches from midsternum.

A systolic bruit is heard all over the upper part of the precordium; it is loudest in the pulmonic area, where it is harsh, rough, and grating in character. The second sound in this locality is greatly accentuated, at times "ringing" in character; a similar bruit is heard in the aortic area, and a short, sharp second sound. The bruit is thought to be identical with that just described. Both sounds are loud and clear in the tricuspid area. In the mitral area a systolic bruit is audible accompanying the first sound; it increases in intensity in the direction of the pulmonic area, and is not propagated to the axilla; it is evidently the pulmonary murmur referred to. The second sound is normal. No other murmur was detected during his residence in hospital.

On admission there was, also, evidence of bronchitis. He soon became well as regards the bronchial condition, the respirations being 15 per minute.

The liver is somewhat enlarged. When the red blood corpuscles were counted they were found to number 6,400,000, which is in keeping with the results of Drs. Gibson, Toenissen, and others in cases of pulmonary stenosis.

He has now and then had to return to the out-patient department owing to slight attacks of bronchitis.

What is chiefly noteworthy is that compensation is so well established to permit of him attending to his occupation, which is, fortunately, a suitable one.

As regards the diagnosis, the author considers the congenital nature of the condition and the presence of pulmonary stenosis established. He is disposed to think that the ringing second pulmonic sound indicates dilatation of that artery beyond the stenosis, and probably a patent ductus arteriosus. Whether a patent foramen ovale or incomplete ventricular septum is also present it is most difficult, if not impossible, to determine.

In the course of the discussion on the paper, Dr. Hubert Armstrong mentioned two cases in which death had been instantaneous. One was a baby, in which the only lesion found *post-mortem* was a patent foramen ovale; the other was a boy of 12, with marked lividity and a pulmonary murmur, who fell dead on the street.

SURGERY.

By JOHN PATRICK, M.A., M.B.,

AND

ARCH. YOUNG, M.B., C.M., B.Sc.

Euguform, a New Antiseptic.—Georg Lotheissen (Wien), in the *Centralblatt für Chirurgie*, 25th June, 1904, gives his experience of this little known antiseptic. For three years it has been in use by dermatologists, but it is not generally known in surgical practice. It is derived from guaiacol and formaldehyde. It is a fine greyish-brown powder, almost odourless, slightly soluble in alcohol, and easily soluble in acetone. Twenty-four hours after subcutaneous injection it is discoverable in the urine.

Experiments on animals by intraperitoneal injection show that it is about three times less toxic than iodoform.

Euguform has a notable cleansing and drying influence. In fœtid ulcers of the leg, for example, treated even when the patient is going about, there is a very rapid improvement under daily dressing with a 10 per cent mixture of euguform and vaseline, or by dusting on the powder every second or third day.

Lotheissen is therefore of opinion that euguform should prove specially useful in dispensary work.

It has marked deodorising properties, and may be used as a 5 or 10 per cent euguform-glycerine emulsion in many ways, as, for example, in inoperable uterine cancer. In tuberculous disease this drug is of very great service. The author says that tubercular ulcers heal rapidly, as also tubercular fistulæ. The treatment of cold abscesses is by puncture, evacuation, and injection of the euguform-glycerine emulsion, and in some cases has been attended with good results.

It is not to be supposed that iodoform can be completely set aside, but it is good to know of an efficient substitute.—J. P.

Decapsulation of the Kidney in Bright's Disease (Edebohls' Operation).—A discussion on this subject took place at the German Surgical Congress in Berlin in April, 1904, and a short report of it is given in the *Centralblatt für Chirurgie.*

Paul Rosenstein (Berlin) gave his clinical experience of the operation, based on 6 cases operated on by Israel. The results which have been observed up to five to fifteen months are very unfortunate: 1 death, 1 case made worse, 2 unaffected by the operation, 2 improved in so far as the œdema and headache are concerned, but with no diminution in the number of tube-casts or in the quantity of albumen. In his opinion, Edebohls has not cured one case of undoubted Bright's disease, but that the cured cases of nephritis have been movable kidneys, the fixation of which has been followed by cure of the nephritis. He concludes that decapsulation of the kidney in advanced Bright's disease is a dangerous operation, with a mortality of 26 per cent, and that cure is in no case lasting.

Riedel (Jena) did a one-sided decapsulation on the very urgent request of the patient, a young man. A certain amount of improvement resulted, but he refused to operate on the other even though more urgently besought.

Kümmell (Hamburg) was surprised that Edebohls should mention one-sided Bright's disease; in 100 such cases examined, he found only double-sided disease present. He had performed the operation seven times: 1 case died from uræmia, 2 died five to six days after the operation, 2 died two years after, and 2 seemed improved in so far as the amount of albumen dropped from 10 per cent to about 1 to 3 per cent. Cure is by no means certain.

Franke (Brunswick) described two cases in which he did the operation of decapsulation on both sides. In one no improvement resulted, and the patient did not live long; in the other the success seemed doubtful, as the quantity of albumen appeared to be rather increased. He thinks more observations are required before the operation can be recognised as a justifiable one.—J. P.

On the Possibility of Increasing the Resistance of the Peritoneum against Infection in Operations upon the Stomach and Bowel.—Von Mikulicz-Radecki, of Breslau, discussed this subject at the Thirty-third Congress of the German Surgical Association, 8th April, 1904.

The following summary of the official report in the *Deutsche Medizinal-Zeitung* (19th May, 1904) represents the essential points laid before the Association by von Mikulicz:—

Premising his remarks by a reference to the fact that, if organs operated on themselves contain pathogenic bacteria, even the most painstaking efforts at asepsis may fail, he emphasised the special application of this in the case of stomach and bowel, which, indeed, always contain hosts of pathogenic micro-organisms.

To limit the risk of peritoneal infection from such a source, the most varied means have been recommended, but, in spite of all, no real security may be said to have been attained. This is in marked contrast to the successful means at command in dealing with possible infection from without.

Even from the most minute openings in the bowel bacteria may escape, and these may, after the operation, give rise to serious trouble, the degree of danger depending upon the size of the opening and the depth at which the mischief occurs. It is well known, of course, that the peritoneum possesses tolerable powers of resistance—much greater, indeed, than was formerly supposed—but, though it may be able to defend itself from a moderate quantity of bacteria, its powers of resistance fail before the attack of large quantities of the same.

Von Mikulicz considered the possibility of diminishing the risks of peritoneal infection under two heads—(1) By lessening the virulence of the micro-organisms; (2) by raising the resisting power of the peritoneum. As regards the former of these, he concluded that so far not much has been accomplished. Efforts at disinfection of the alimentary tract have, after numerous experimental attempts, failed to produce any promising result. As regards the second alternative, two possible methods are open. The first is specific immunisation. Considering, however, that the chief part in infection is played by streptococci, and that against these, serum-therapy is still very little developed on account of the large variety of species of streptococci, also that pretty much the same is true of the colon bacilli (of which at least twenty different species have been cultivated), he had not, apparently, very great hope of success from this method.

There still remains, however, a second method, viz., that of raising the general resisting power of the peritoneum by the production of an artificial hyperleucocytosis and by assisting phagocytosis.

This method has been already put into application for combating pneumococcal invasion, but therapeutically not much can be said to have been achieved by it once the invasion has well commenced, the organism having already expended its strength in meeting the invasion. Better results may be expected, however, if we can induce hyperleucocytosis well in advance of the onset of the invasion.

With this end in view, von Mikulicz arranged a series of experiments at the Breslau University, and these led to very remarkable results. In these experiments, hyperleucocytosis was induced by the local introduction into the tissues of different substances, such as physiological saline solution and nucleic acid.

Animals were infected by intra-abdominal injection of bacillus coli communis, the peritoneum having been previously treated with the substances named.

By this previous treatment, the peritoneum of guinea-pigs was found to have had its powers of resistance enormously increased, being able to withstand as much as forty times the usual lethal dose.

The stomach and bowel were opened, and the contents expressed into the abdominal cavity; of five "control" animals, four died within a few hours, while of ten prepared animals all remained alive.

Even a short time after the injection, great leucocytosis and phagocytosis were found to have been set up, so that it was very soon "all over" with the bacteria.

Flügge had expressed himself to the effect that the demonstration was quite convincing. The question then came to be whether the method might be applicable to man. Up to the present time, it seems that the trials already give reasonable grounds for the belief that its application to man is justified, and that, by its help, we may now be able in such cases to achieve something in advance of what we could formerly.

In thirty-four cases, injections have been carried out, 50 c.cm. of a 2 per cent solution of nucleic acid being injected subcutaneously under the breast. No considerable local or general symptoms were observed to follow this, only locally a very slight reaction, and a transient rise in the body temperature to 38° C. (100·4° F.).

A careful examination gave no sign of change in the urine. All the cases treated showed, without exception, a typical hyperleucocytosis, of which the maximum was attained about twelve hours after the injection.

Von Mikulicz, therefore, believed that the injections should be carried out twelve hours before the operation.

It was noted that in the early hours following the injection there was produced a hypoleucocytosis, but upon this a progressive increase in the leucocytes quickly followed.

Amongst von Mikulicz's cases treated by injections prior to operation were seven cases of stomach resection, fifteen gastro-enterostomies, several gall-stone operations, and so on.[1]

Von Mikulicz concluded, from his impressions of the cases already tried, that the preliminary treatment with nucleic acid *had* exercised a favourable effect, for of those operated on not one had died in the early weeks after the operation, *i.e.*, none had died from anything directly connected with the operation.

Also, taking everything into consideration, the whole course of the wound seemed to follow a more favourable line.

The number of cases so far reported on, however, cannot be said to afford data of sufficient weight to allow of definite conclusions, and it is therefore still necessary to do everything possible to avoid infection.

Von Mikulicz, at the same time, drew attention to the additional benefit to be derived from the use of saline infusions, which (just as nucleic acid) give rise to a hyperleucocytosis.

In spite of the fact that in his earlier years he was a strong advocate for the dry operative method, he now, for this reason, always employs lavish irrigation of the peritoneum with physiological salt solution during his abdominal operations.--A. Y.

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[1] [This abstract was submitted to Professor von Mikulicz-Radecki by the translator, and, in a private communication to the latter, von Mikulicz furnishes the following interesting note, which brings the results almost up to the present date:—"Up to the middle of July the total number of cases so treated in the von Mikulicz Clinique amount in all to one hundred. These include eleven cases of resection of the stomach for carcinoma. Ten of these have recovered; the eleventh, however, died three weeks after the operation, of pneumonia."—A. Y.]

DISEASES OF THE EYE.

BY FREELAND FERGUS, M.D.

Thrombosis of the Central Vein of the Retina. By George Coats, F.R.C.S. (*Royal London Ophthalmic Hospital Reports*).—This is an excellent monograph, carefully written and well illustrated, upon an important and rather obscure subject. As is well known the pathology of this condition is somewhat disputed. Such cases are often complicated with glaucoma, and consequently the condition of the parts is often considerably altered by glaucoma before the case comes into the pathologist's hands. It is thus often not easy to say how far the changes found on pathological examination are due to the thrombosis or to concurrent glaucoma. The present observations have reference to four cases which have recently been investigated by Dr. Coats.

In the first, dimness of vision came on suddenly, and gradually increased till, within a few hours, the affected eye was blind. On examination, the disc was found to be congested and hazy. In the surrounding retina there were large masses of exudation. The veins were enlarged and very tortuous, and innumerable hæmorrhages of various kinds were scattered everywhere throughout the fundus. Shortly afterwards the patient took suppression of urine and succumbed. Between the onset of the disease and the death of the patient the tension is noted as having been + 1. On examination, the corneo-iritic angle was found at one point to be adherent to the ligamentum pectinatum. In the iris some of the vessels showed great thickening of their walls. The retina showed the usual changes of hæmorrhagic retinitis, there being no inflammatory appearances, but merely distortion from the outpouring of blood. Changes of most importance in the case were seen in the retinal and central vessels. The retinal arteries showed a marked thickening of their walls, and consequently a narrowing of the lumen of the vessel. The retinal veins also showed the wall to be considerably thickened, but nowhere entirely obliterated; indeed, in certain places the veins were much engorged, the characteristic change being a thickening of the wall. This characteristic thickening was also found in the vein in the nerve, but in no part was there found to be anything exactly corresponding to a thrombus, nor, indeed, was the lumen occluded.

The second case reported by Dr. Coats is from the clinique of Mr. Simeon Snell. Patient was aged 53. He lost consciousness for two days. On recovery he found he was blind of both eyes. In great measure his sight was restored, but a few months afterwards another attack of blindness came on. Since that time the left eye was permanently blind. When first seen there was neuro-retinitis in his right eye, and in the left swelling of the disc, with hæmorrhage. Thirty years previously he suffered from syphilis. Ultimately the left eye became very painful, and was enucleated. On examination, it was found that there were numerous hæmorrhages in the retina, mostly in the nerve fibre and ganglion cell layers. In the larger retinal arteries there was found a certain amount of endarteritis. On the disc the arteries were very considerably thickened, and in some cases were nearly oblitered. In the retinal veins, Dr. Coats found what he believed to be a thrombus beginning to organise. From the description of the appearances there is little doubt that his interpretation was well founded.

The third case was a woman, aged 62. Here it was noted that there was a trace of albumen. The vision of the right was $\frac{6}{18}$, and the left, light and shade. The tension of the left eye was noted as being + 2. An iridectomy was performed, but, subsequently, on account of pain, the eye was enucleated. The retina in this case showed certain definite inflammatory lesions. The retinal arteries showed distinct endarteritis. The retinal veins were not greatly engorged, but showed considerable thickening. The central vein was formed by the junction of several branches just in front of the lamina; within the vein, at one side of it, there was a round homogeneous coagulum. Farther back, the lumen became entirely obliterated, and Dr. Coats believed this obliteration was due to a thrombus which had become organised.

The fourth case which he mentions showed a trace of albumen. The eye was painful and the tension high. The only thing specially to note in the clinical features of the case was that after enucleation there was very violent bleeding. The retinal veins, on examination, were found to be much engorged, and showed a considerable thickening of their walls. The central vein within the lamina was found suddenly to disappear, and no longer to accompany the artery.

Altogether, Dr. Coats' cases, which we admit we have not very fully synopsised, are well worthy of careful study.

Glaucoma after Cataract Extraction.—Professor Lapersonne (*Archiv. d'Ophthalm.*, 1904) calls attention to Pagenstecher's observations in which he distinguishes (1) glaucoma coming on immediately after operation, (2) glaucoma occurring some three or four days after operation, and (3) that happening at a much later period.

The second class of cases are by far the most frequent, and are due to the abuse of atropine, to the presence of cortical matter, and, also, to the iris and capsule being caught in the wound. Further, Pagenstecher and Major Smith, who both extract the lens in the capsule, have recorded cases of glaucoma. In other cases there seems to be a predisposition to the condition. Lapersonne seems to attribute many cases of glaucoma to an œdema of the vitreous humour which, in his opinion, largely depends on the renal permeability to chlorides. A case which he records seems of importance in this respect. A woman, aged 52, came to the Hôtel Dieu with cataract. The right eye was operated on by extraction combined with iridectomy. Everything went well, and the patient was ultimately dismissed. Thirty-seven days after the operation she was seized with a violent attack of glaucoma in the eye from which the cataract had been removed, and was readmitted to the hospital. The condition yielded to treatment, but a few days afterwards there was another attack. The patient, in addition to the ordinary treatment, was given a diet free from chlorides. The general condition was one of high arterial tension, with a trace of albumen in the urine, and the methylene blue test showed a want of renal permeability.

Exact observations were made for a month, and it was observed that on two occasions, when the amount of chlorides eliminated was greatly reduced, there was an exacerbation of glaucoma. Lapersonne had no doubt that the glaucomatous attacks had a certain relationship to the amount of chlorides being eliminated.

Hæmorrhages in the Eye present at Birth.—In *Knapp's Archives*, 1904, Dr. Coburn has called attention to hæmorrhages in the eye present at birth. This condition is more frequent than is generally believed by ophthalmic surgeons. As a matter of fact, hæmorrhage, probably a result of labour, takes place in quite a considerable percentage. Other observers have found the same thing. Thus, Schleich found such hæmorrhages to be present in about 33 per cent of cases, but Bjerrum gives so low a figure as only 3 per cent. Dr. Coburn's observations deal with the eyes of thirty-seven infants who died at a maternity hospital. In seventeen of these hæmorrhages were found, for the most part in the retina, but sometimes also in the optic nerve sheath and in the optic nerve head. He suggests that these hæmorrhages may be the cause of the so-called amblyopia ex-anoxia.

Choroidal Sarcoma.—In the same *Journal* Verhoeff calls attention to cases of choroidal sarcoma in which there is profuse hæmorrhage, the whole condition simulating glaucoma with hæmorrhage. The author thinks such cases are somewhat rare, an opinion with which we scarcely agree, because, given a case of high tension with blood in the anterior chamber, the possibility of the presence of a malignant tumour would, we think, occur at once to the mind of every ophthalmic surgeon.

DISEASES OF CHILDREN.

By R. BARCLAY NESS, M.A., M.B., F.F.P.S G.

Herpes Zoster Associated with Generalised Bullous Eruption from Prolonged Administration of Arsenic.—Sequeira, in The *British Journal of Children's Diseases* (April, 1904), describes a case in which there was the unusual association of a generalised bullous eruption with herpes zoster, the result of prolonged administration of arsenic.

The patient was a well-grown girl, aged 5 years, who was brought to the London Hospital in the summer of 1902, suffering from psoriasis. The eruption was everywhere of the guttate type, affecting primarily the trunk, thereafter the scalp, and, at a still later date, the arms and legs. Three minims of Fowler's solution in water were prescribed three times a day, and the spots were locally treated after removal of the scales with ichthyol and salicylic acid. The patient lived in the country, and was seen only at long intervals, but the treatment was not intermitted. About three months after this treatment was begun, the mother states that she noticed that the skin of the trunk was darker than normal, but she attributed the change in colour to the ointment.

About four months after the patient was first seen, the child was brought up to the hospital with a crop of vesicles and bullæ all over the trunk. The lesions varied in size from a pin's head to 5 mm. in diameter. They were rounded, tense, and contained a clear fluid, and there was a narrow zone of hyperæmia round each.

On the loin, hip, and the upper part of the thigh, and the anterior aspect of the lower part of the abdomen on the right side, there was a copious eruption of herpes zoster corresponding with Head's first lumbar area. The skin of the trunk was also pigmented. The colour was a pale yellowish brown, with the peculiar dappled appearance of arsenical pigmentation. The psoriasis had almost disappeared, the face and extremities were entirely free from vesicles, and the pigmentation was limited to the parts covered by clothing. The skin of the palms and soles was free from hyper-keratosis. There was no paralysis and no wasting of muscle, and the knee-jerks and other reflexes were present. There never had been any catarrh of the eyes or nose, or gastritis.

The stopping of the arsenic and the adoption of simple treatment led to the disappearance of both forms of eruption and the gradual lessening of the pigmentation. At the site of herpetic eruption there were left scars, but this was not so in the case of the bullous eruption.

The special point of interest in the case is the co-existence of the generalised vesicular and bullous eruption with the herpes zoster evidently produced by the prolonged administration of the arsenic.

Curious Congenital Cysts of the Lung Associated with Dextro-Cardia Caused by Pressure from the Cystic Lung. —Carpenter, in the *British Journal of Children's Diseases* (April, 1904), describes a case with the above features in a girl, aged 5 months, who first attended the North Eastern Hospital, London, on 16th November, 1903.

The child had been ill a fortnight with "wheezing at the chest," but before that she was quite well. She was breast-fed. The first child was stillborn; the next died at 5 weeks old; the child following also died; the fourth and fifth were alive and well; the sixth had fits; the seventh was well; and the eighth was the patient.

On examination, the child was pale, with a cyanotic tint, and there were signs of bronchitis.

The cardiac impulse, which was weak, was in the fifth interspace, half an inch outside the nipple line in the right side. The superficial area of cardiac dulness commenced at the fourth right costal cartilage.

The spleen was one finger-breadth in front of the costal margin, and the liver two finger-breadths below the costal margin in the nipple line.

The infant was ordered a cough mixture, and improved, but on 27th November it was admitted into the hospital in a collapsed condition, with a temperature of 97° F. On its recovery from the collapse, the temperature ran up to 103·5° F., the respirations were 84 to the minute, and the pulse-rate 144 to the minute. It became convulsed, and died on the 29th.

At the *post-mortem* examination, the heart was found as indicated during life. It was not rotated on its axis; it was thrust over bodily to the right side. Its valves and blood-vessels were normal. The right lung was broncho-pneumonic. The lower lobe of the left lung was slightly adherent to the chest, and it appeared to be converted into an air-bag. The other organs were quite healthy. On further examination, almost the whole of the lower lobe was found to be converted into a cyst the size of a small orange. It contained nothing but air. It was divided into four or five secondary smaller cavities by septa, which were perforated by circular apertures. The walls of the cyst were lined with a yellowish granular material, the naked eye appearance of which presented nothing very definite. The bronchus, traced down, was found to enter a small area of comparatively unaffected lung. None of the divisions of the bronchi could be found to enter the cyst. Below the cyst was another portion of apparently healthy lung which, on being cut into, was found to be composed of numerous small cysts of various sizes, some of which contained granular material, and some were empty.

Had it been a single cyst, one might have thought it a sequence of some destruction of the lung, but the presence of numerous cysts seems to suggest that the condition is more of the nature of congenital cysts akin to those of the liver or the kidney.

Tonsillitis a Cause of Acute Nephritis.—Morse, in the *Archives of Pediatrics* (May, 1904), gives an account of four cases of tonsillitis followed by acute nephritis, and he believes that this is a more common sequela of tonsillitis than is generally supposed. He points out that it would seem reasonable that tonsillitis, being due, as it is, to bacterial infection, and being often complicated by cervical adenitis, peritonsillar abscess, or acute inflammation of the middle ear, should lead to inflammation of the kidney as do other acute diseases due to micro-organisms. An additional reason why it might naturally be followed by inflammation of the kidney is that it is usually caused by streptococci; and, as is well known, the usual cause of acute nephritis in scarlet fever, which is more often than any other disease complicated by acute nephritis, is the streptococcus.

Of the four cases recorded, two were adults and two were children. The histories of these were briefly as follows:—

Case I.—A man, aged 28 years, was seen on 8th January, 1904. He had scarlet fever as a boy, but had always been well and vigorous. Subsequently, he was examined for life insurance on two occasions—on the first, four years ago; and on the second, four weeks previous to the above date. The urine was examined on both occasions. The day after the last examination, his throat became affected. The tonsils were much swollen, and a peritonsillar abscess in one or both was suspected. He recovered very slowly from this illness. After about two weeks, he began to complain of nausea and of oppression in the stomach, followed by headache, which was worse in the morning, and œdema about the eyes and feet. The urine was found to be slightly smoky in colour, acid, and of a specific gravity of 1102. It contained albumen and blood, and the microscope revealed the presence of hyaline and epithelial tube-casts.

Case II.—A physician, aged 35 years, was seen on 13th February, 1904. He had scarlet fever as a child. His urine had been examined several years and some months previously, and found normal. Except for hip disease as a child, he had always been well and strong. He was taken suddenly sick on 21st January, 1904, with a sore throat. The throat was a good deal inflamed, and the tonsils enlarged. There was some exudation on both. The temperature rose to 103° F. Fearing that it might be diphtheria, he took a large dose of antitoxin. The throat was clear the next day, however, and no Klebs-Löffler bacilli were found. The temperature was normal on the 23rd, and he was out on the 24th. Although up and about his work, he did not feel so well as usual. He vomited the whole of the night of 2nd February, but kept at his work next day, although his temperature was 104° F. He noticed that the urine was dark coloured, but being very busy he omitted to examine it. He continued to have considerable fever, and finally went to bed. He vomited again on the 6th and 7th, when his temperature began to be lower. The urine was then examined, and found to be smoky and to contain a large amount of albumen. The sediment was characteristic of acute nephritis, and showed no fatty elements. Since then the temperature had been normal, but there had been several slight attacks of dyspnœa. There had been no vomiting. The skin had acted well. When patient was examined, it was found that œdema was present; the heart was enlarged to the left. There was an occasional râle over both lungs behind. The urine was pale, of low specific gravity, contained albumen, blood, small round mononuclear cells, a few leucocytes, many hyaline fine granular and coarse granular casts, and a few brown granular and epithelial casts. There were no fatty elements.

The other two cases were children.

Case III.—A little girl, 6 years old, was seen on 6th December, 1903. She had always been pretty well. There was no scarlet fever in the neighbourhood, and there had been no exposure to such as far as was known. She had a mild sore throat about the 10th November, which received treatment. The throat did not look like that of scarlet fever, and there was no eruption nor desquamation. After a few days she was up, though not quite well. On 30th November, the urine was noticed in the morning to be dark. This was noticed again on 3rd December, when it was scanty; it contained albumen, numerous casts, some leucocytes, but no free blood. The face was puffy. The urine remained scanty on 5th and 6th December. The bowels had moved thoroughly, and the skin acted freely, but she complained of abdominal pain, and was constantly sick.

Case IV.—A boy, aged 4 years, was seen on 3rd June, 1903. Ten days previously, he had a sore throat, with much enlargement of cervical glands, the enlargement of the glands being entirely out of proportion to the soreness of the throat. Cultures showed no Klebs-Löffler bacilli; the temperature was moderate; scarlet fever was excluded; there was no rash; no desquamation; no scarlet fever in the neighbourhood, and no exposure to such. On 1st June, the urine was noticed to be dark coloured, scanty, and was found to contain albumen. Slight œdema was detected about the eyes.

Dr. Morse, in recording the last two cases, takes care to exclude scarlet fever, and points out that the antitoxin used in the second case could not be reckoned as a cause. In diphtheria, at anyrate, it prevents the development of nephritis. In the first case, tonsillitis is the only possible cause.

The lessons to be learned from these cases are—That tonsillitis should not be looked upon, as it usually is, as a simple disease and of little importance. A disease which can cause acute endocarditis and acute nephritis is certainly one worthy of consideration. The heart and urine in tonsillitis should therefore be examined carefully, as in rheumatism or scarlet fever, and the examination kept up during convalescence.

Books, Pamphlets, &c., Received.

Epilepsy and its Treatment, by William P. Spratling, M.D. Fully Illustrated. London: W. B. Saunders & Co. 1904. (18s. net.)

Serums, Vaccines, and Toxines in Treatment and Diagnosis, by William Cecil Bosanquet, M.D. London: Cassell & Co., Ltd. 1904.

The Development and Anatomy of the Prostate Gland, together with an Account of its Injuries and Diseases and their Surgical Treatment, by W. G. Richardson, M.B., B.S. London: J. & A. Churchill. 1904. (10s. 6d. net.)

Reports of the Royal Asylum of Montrose, for the Year ending 14th May, 1904.

Arteria Uterina Ovarica: The Utero-Ovarian Artery or the Genital Vascular Circle, Anatomy and Physiology, with their Application in Diagnosis and Surgical Intervention, by Byron Robinson, B.S., M.D. Chicago, Ill.: E. H. Colegrove. 1903. (1 dol.)

Beri-Beri: Its Symptoms and Symptomatic Treatment, an Essay, by Percy Netterville Gerrard, M.D. London: J. & A. Churchill. (2s. 6d. net.)

Also Extracts from above Essay. (1s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 20TH AUGUST, 1904.

	WEEK ENDING			
	July 30.	Aug. 6.	Aug. 13.	Aug. 20.
Mean temperature, . .	59·7°	62·9°	57·0°	54·5°
Mean range of temperature between day and night, .	14·5°	14·9°	14·6°	18·0°
Number of days on which rain fell, ...	...	6	4	3
Amount of rainfall, . ins.	...	1·08	0·90	0·56
Deaths registered, . . .	228	233	266	294
Death-rates, ...	14·9	15·2	17·4	19·2
Zymotic death-rates, . .	1·9	3·1	4·8	3·9
Pulmonary death-rates, .	3·9	3·2	2·9	2·6
DEATHS—				
Under 1 year, . . .	56	69	97	82
60 years and upwards, .	43	43	41	52
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	1	1	2	3
Scarlet fever, . . .	2	...	1	1
Diphtheria, ...	...	...	3	...
Whooping-cough, . .	12	15	17	11
Fever, ...	1	...	...	...
Diarrhœa, ...	13	32	50	44
Croup and laryngitis, .	1	...	...	...
Bronchitis, pneumonia, and pleurisy, ...	27	26	20	24
CASES REPORTED—				
Small-pox, ...	1	9	6	2
Diphtheria and membranous croup, ...	8	8	13	5
Erysipelas, ...	14	8	13	20
Scarlet fever, ...	15	24	28	32
Typhus fever, ...	...	...	1	...
Enteric fever, ...	4	7	9	9
Continued fever, . . .	...	1	...	...
Puerperal fever, . . .	1	1	2	2
Measles,*	52	27	38	17

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *25th August, 1904.*

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ORIGINAL ARTICLES.

THE CAUSES OF INFANTILE MORTALITY.

Discussion at the Glasgow Medico-Chirurgical Society on 4th March, 1904.

Dr. A. K. Chalmers, in introducing the discussion, said—In any review of the changes which have taken place in the causes of death during the last thirty years, few things stand more in need of investigation than the persistently high range of the mortality among infants during the first year of life.

It might be assumed that the reduction in the general death-rate, and more particularly in the death-rate among children under 5 years, would have been associated with a corresponding movement in the death-rate of infants. To some extent it may be shown that within limits a change of this nature has occurred, but investigation on these lines brings into prominence one feature at least of the infantile rate which is refractory, and, by reason of its volume, tends to obscure the other changes which have occurred. One group of the causes of infantile mortality may thus be regarded as "constant" in their operation, and the others as "variable."

It has been suggested that our decreasing birth-rate is being compensated by increased vitality in the children born; but the decrease in the birth-rate during the last thirty years has been about 20 per cent, while the infantile mortality has only declined from 12 to 14 per cent. Moreover, vitality has a positive as well as a negative side—it is not merely the escape from perils which attend infant life; primarily, it is the possession of certain physiological acquirements which make independent life possible. Estimated on this basis, it would be difficult to establish for the infants of to-day any claim to a vitality which those of a past generation did not equally enjoy. If this view be correct, "vitality" is a quality of the child at birth, and not the accident of its surroundings afterwards.

The extent of actual loss to population which the mortality of the early years of life implies may be fairly represented by an illustration taken from the middle years of the period to which I have referred. According to the rates then obtaining in Glasgow, in 100,000 births of both sexes, nearly 32,000 (31,608) had died before reaching their fifth year; and of this number, more than one half (16,110, comprising 8,950 boys and 7,160 girls) were dead before completing their first year. In three periods of years, extending from 1886 to 1900, the rate per 1,000 born was 143, 146, 151; in 1901 it was 149, and in 1902 (a year of unusually low infantile rates owing to the almost entire absence of autumn diarrhœa) it was 128.

I need scarcely add that our local experience only illustrates what is occurring elsewhere, and, in point of actual extent, compares not unfavourably with other large centres of population.

Among Scottish towns, the infantile rate of Dundee during last decade exceeded that of Glasgow, and in Aberdeen it was only 3 per 1,000 lower, while in the large English towns it was without exception higher.

It will help towards an appreciation of the subject to refer

GLASGOW—EXPECTATION OF LIFE OF MALE CHILDREN.

Ages.	Expectation of Life in Years.	Difference.
—	35·18	—
1	41·54	6·36
2	45·25	3·71
3	46·55	1·30
4	47·03	·48
Increased expectation at ages 0-5 years = 11·85 years.		

for a moment to the rapid decrease in the liability to fatal disease which occurs in the early years of life. This can be readily done by an illustration taken from the increasing expectation of life in male children under 5 years (p. 242).

A child who has completed his fourth year has thus an expectation of future life which exceeds that at birth by almost twelve years, but it is to be observed that fully six of these have already been gained if he completes his first year. And when the enquiry is carried backwards into the several months of the first year of life, differences quite as great are to be observed between the several monthly periods. If we take the deaths in 1902 as an illustration (although it should be remembered that diarrhœa was relatively less prevalent than usual), we have this distribution:—

Number of deaths	under 3 months,	. .	1,633
Do.	3 to 6 ,,	. .	557
Do.	6 to 12 ,,	. .	748
			3,168

while, of the deaths occurring under 3 months, 1,072, or fully one-third of the total infantile deaths fall within the first four weeks of life. These are due in great part to causes which may be described as refractory to our present methods of dealing with the causes from which they arise.

It would be possible, I believe, to establish in a more extended enquiry the suggestion which arises from a comparison of single years that this element of refractoriness in the infant death-rate is confined to the first three months of life, and that especially during the subsequent months of the first years a progressive decrease in the incidence of fatal disease is going on, which is more in conformity with the general reduction of death-rates with which we are familiar in the subsequent periods of life. These are the illustrations

Deaths of Infants per 1,000 Births.	Year.	DEATHS UNDER			Total Deaths.
		3 Months.	6 Months.	12 Months.	
191	1871	1,460 (40 %)	636 (18 %)	1,512 (42 %)	3,608
159	1872	1,335 (42 %)	608 (19 %)	1,255 (39 %)	3,198
128	1902	1,663 (52 %)	557 (18 %)	948 (30 %)	3,168
142	1903	1,712 (48 %)	657 (18 %)	1,194 (34 %)	3,563

of what I have ventured to call the constant and the variable quantities. For example, in the year 1872, and again in 1902, the numbers of infant deaths almost correspond, but the proportions occurring under 3, under 6, and from 6 to 12 months varied as shown in the table (p. 243).

In this comparison, the restricted diarrhœal rate in 1902 will be borne in mind; but, although the total infantile death-rate in 1872 was 159 per 1,000 births, and in 1902 only 128, the number dying during the first three months of life, out of 1,000 born in 1872, was 66, and in 1902, 67. In other words, it had not decreased despite the absence of diarrhœa; whereas, between the third and sixth months, this rate (per 1,000 births) fell from 32 to 23, and between the sixth and twelfth month the decrease is greater.

In order, then, to ascertain the causes of death in the several months of the first year of life, I have arranged the deaths for 1902 in a table which is based on the classification originally adopted by the English Registrar-General in his report for 1891, and of which the following is a summary:—

DEATHS, 1902.[1]

	Total Deaths.	Death-rate per 1,000 Births.	Proportion of Total Deaths.
I. Immaturity, . . .	1,088	44·0	34·4
II. Diseases of respiration, .	746	30·2	23·6
III. Diseases of digestion, . .	389	15·7	12·2
IV. Tubercular diseases, . .	268	10·8	8·5
V. Infectious diseases, . .	20	0·8	0·6
VI. Diseases of nervous system,	266	10·9	8·4
VII. Accidents of birth, . .	39	1·5	1·2
VIII. Suffocation, . . .	9	0·4	0·3
IX. Other violence, . . .	149	6·0	4·7
X. All other causes, . .	194	7·8	6·1
Total, . .	3,168	128·1	100·0

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[1] *Group I.*—Consists of (*a*) premature births, (*b*) congenital malformations, (*c*) atelectasis, (*d*) atrophy and debility. It may be suggested that a considerable number of these latter should be transferred to diseases of the digestive system; but, of 553 deaths ascribed to atrophy and debility in the first twelve months of life, 415 occurred during the first three months, and for this reason may reasonably enough be regarded as primarily owing to immaturity at birth.

Group III.—Includes diarrhœal diseases, dentition, and other diseases of digestion not classified separately.

Group V.—Infectious diseases include syphilis.

Immaturity.—More than a third of the deaths arise from this cause—515 die in the week of their birth, 121 in the following week, and 939 out of the 1,088 within three months.

In the healthiest districts of the city—Crosshill, Langside and Mount Florida, Pollokshields (East) and Strathbungo, Pollokshields (West) and Bellahouston, Hillhead and Kelvinside—in none of which the general death-rate in 1881-90 reached 12 per 1,000, and in two of which it was only 8 and 9 per 1,000, while the rate for the city was 21·5; and where the highest infantile death-rate in that period was only 86, and the lowest 63, compared with 149 for the city, this proportion to the total deaths of those grouped under immaturity, and their distribution throughout the early weeks of life, are maintained, although the total deaths for the year 1902 numbered only 68.

With larger numbers, some variation in the constituents of the group might become apparent; but, should a more extended enquiry confirm the impression which the comparison creates, we have much to learn both from the physiologist and the obstetrician before a successful effort to reduce this section of the infantile death-rate can be attempted. As

SEASONABLE VARIATION IN DEATHS OF INFANTS FROM DIARRHŒA.

	1901.	1902.
First quarter, ...	44	61
Second quarter, ...	73	42
Third quarter, ...	328	91
Fourth quarter, ...	87	89
Totals, . .	532	283

MEAN TEMPERATURE IN SHADE.

	1901.	1902.
June, ...	54·3	53·5
July, ...	61·5	54·9
August, ...	57·1	54·3
September, ...	55·4	53·5

causes of death, they would appear to be less related to those which prove fatal in the later months than to conditions of vitality affecting the child *in utero*, and, it may be, should be regarded as a fragment of a still greater volume of antenatal deaths to which compulsory registration of stillbirths would alone give us the key.

Diseases of respiration.—This forms the next largest group of infantile deaths, and is distributed throughout all the months, but in decreasing numbers after the second month. They form about one-fifth of the total deaths.

Diseases of digestive system.—Many of these most probably owe their origin to an unstable condition of the nervous system, and this again may bring them into relationship with the "immature" group. The year selected for the tabling fails to afford a true impression of the most important section of these deaths, because of the diminished incidence of diarrhœa. This may be illustrated by a comparison of the years 1901-1902 (p. 245).

In an analysis of 122 deaths of infants occurring during the months of August and September, the proportion of those fed only on breast milk was 28 per cent, while 72 per cent were artificially fed either on cows' milk or on patent foods.

Professor Glaister said—It is of great significance to a State that it is being well supplied with young lives to take the place of those which have become worn out and of persons who have emigrated. In order, therefore, to estimate whether this is the case or not, the birth-rate and the rate of infantile mortality must be closely scrutinised from time to time. Deficiency in young lives, it will be obvious, may depend upon both causes—the former contributing by lack of normal supply, the latter by depriving of life in a wasteful manner the young lives which are brought into the world. In face of a healthy birth-rate, the annual increment of lives being much greater than the annual loss by deaths, probably less critical attention is apt to be paid to this subject than where the balance of lives and deaths comes closer to the point, indeed, that the population becomes stationary or non-progressive.

Another important feature of infantile death-rates is that, while during the last thirty years particularly there has been seen in all countries in which progress has been made in general sanitation a progressive declination of the general death-rate, no such diminution has been discernible in the death-toll of children. It is quite obvious, therefore, that those causes which have operated toward the amelioration of the condition of the lives of average citizens have failed to reach the infants under 1 year of age. That this is true there can be no doubt, and that the fact has been disappointing to sanitarians there is, equally, no doubt. As Dr. Chalmers has already remarked, the term "infantile mortality" is understood to mean the proportion of deaths of young children under 1 year of age in 1,000 children born in that year. The rate is therefore stated as a given figure per 1,000.

Dr. Chalmers has mainly confined himself to the state of infantile mortality in Glasgow. I should like, however, to take a broader outlook of the subject than that, and, therefore, my first proposition is that *high death-rates in children under 1 year prevail in all parts of the civilised world.* It is not necessary to quote extensive statistics to prove this fact, or even to consider the figures which prevail in the chief centres of population, such as those of the United States. If, for example, we confine our attention to France and Germany on the one hand, as representing foreign countries, and to the conditions particularly of our own country, and under different phases of existence, sufficient statistical evidence will be afforded us to show that that proposition is true. Take France first. Especial attention is being given to the subject of infantile deaths because of the stationary state of the population of that country. It, therefore, becomes highly desirable and necessary that infant lives should be preserved and tended. If we take the range of the mortality-rates which obtains among infants in the chief places of population in that country, it will be seen that the mortality per 1,000 varies from 145 in Paris up to 509 in St. Pol-sur-Mer. Germany tells the same story, and so also do Austria, Russia, Spain, Italy, and other countries of the continent of Europe.

But it will be wise to consider at greater length the statistical evidence of infantile deaths in our own country, because, if a remedy, or remedies, are to be suggested, obviously such would be made to apply in our own country in the first place. In order, therefore, to form some concrete idea of the extent of death-toll per annum in children under 1 year of age, let me ask your attention to the accompanying table (p. 248).

Summing these figures for both sexes who died under 1 year of age, there is obtained for England and Wales in the year 1891 a total of 135,801 deaths, of which 20,776 occurred in London and 115,025 in the provinces; and for the year 1900 the figures are 142,912, 21,039, and 121,873 respectively. These gross totals, however, are subject to correction by comparison of the total births in these respective years. But

TABLE I.—DEATHS OF CHILDREN UNDER 1 YEAR IN ENGLAND AND WALES, IN LONDON, AND IN THE ENGLISH PROVINCES FOR THE YEARS 1891 AND 1900.

	Year.	Under 3 Months.	Under 6 Months.	Under 12 Months.	Total Under 1 Year
MALE INFANT DEATHS.					
England and Wales,	1891	37,912	15,266	23,079	76,257
London, . . .	,,	5,379	2,397	3,632	11,408
English Provinces, .	,,	32,533	12,869	19,447	64,849
England and Wales,	1900	39,158	16,745	23,555	79,458
London, . . .	,,	5,575	2,459	3,518	11,552
English Provinces, .	,,	33,583	14,286	20,037	67,906
FEMALE INFANT DEATHS.					
England and Wales,	1891	28,609	11,874	19,961	59,544
London, . . .	,,	4,283	1,889	3,196	9,368
English Provinces, .	,,	24,326	9,985	15,865	50,176
England and Wales,	1900	29,662	13,538	20,254	63,454
London, . . .	,,	4,269	2,080	3,138	9,487
English Provinces, .	,,	25,393	11,458	17,116	53,967

the maintenance of a high mortality figure is seen by taking the mortality-rate for England and Wales per 1,000 births for these respective years. These figures are from all causes—164 per 1,000 for 1891 and 169 per 1,000 for 1900 for males, and 133 per 1,000 for 1891 and 139 per 1,000 for 1900 for females. These figures, therefore, of themselves justify the assertion that the rate of infantile mortality is not diminishing.

Further examination of English statistics for the same decade also establishes the fact that the incidence of infantile mortality varies in different parts of England. For example, in counties which possess large urban or populous centres the rate is higher than in those the population of which is mainly rural. Thus, in the counties of Lancashire, Northumberland, and Durham—counties which contain large manufacturing centres—the average mortality in 1901 was 197 for males and 163 per 1,000 for female children, whereas in such counties as Rutland, Wilts, and Dorset—which are chiefly agricultural—

the average mortality in the same year was 102 per 1,000 for males and 88 per 1,000 for female children. In this way may be analysed the incidence of the infantile mortality of different counties of England.

The following table (Table II) shows some of the registration counties in which the rate is 166 per 1,000 or under for males and 136 or under for females; and Table III, some of those in which the figure for males is 166 and over per 1,000, and for females, 136 or over.

These dividing figures have been chosen because the average rate for males in England and Wales for 1901 was 166 per 1,000, and 136 for females.

TABLE II.—SOME REGISTRATION COUNTIES IN ENGLAND IN WHICH FOR THE YEAR 1901 THE MALE INFANTILE MORTALITY WAS 166 PER 1,000 OR UNDER, AND THE FEMALE MORTALITY WAS 136 PER 1,000 OR UNDER.

Registration County.	Males.	Females.
Rutland,	99	90
Wiltshire,	101	80
Dorset,	107	93
Westmoreland,	109	79
Hertford,	111	82
Buckingham,	113	101
Huntingdon,	115	76
Somerset,	117	89
Hereford,	118	92
Berkshire,	119	95
Shropshire,	119	100
Sussex,	121	103
Oxford,	122	89
Gloucester,	125	105
Bedford,	128	97
Cambridge,	128	99
Surrey,	129	100
Hampshire,	136	113
Devon,	136	107
Middlesex,	138	122
Cornwall,	139	105
Cumberland,	141	117
Suffolk,	142	106
North Wales,	148	125
Kent,	149	111
Worcester,	149	120
Lincoln,	153	125
Norfolk,	157	113
Yorks (North Riding),	158	140
Essex,	159	133
London,	162	136
Derby,	164	113

TABLE III.—SOME REGISTRATION COUNTIES IN ENGLAND IN WHICH FOR THE YEAR 1901 THE MALE INFANTILE MORTALITY WAS 166 PER 1,000 OR OVER, AND THE FEMALE MORTALITY WAS 136 PER 1,000 OR OVER.

Registration County.	Males.	Females.
Leicester,	167	138
Monmouth,	167	144
Cheshire,	171	138
Yorks (East Riding,	177	143
Stafford,	181	146
Yorks (West Riding),	184	152
Warwick,	184	151
Nottingham,	186	157
South Wales,	187	153
Durham,	194	164
Lancashire,	196	162
Northumberland,	201	163
England and Wales,	166	136

Careful consideration of these tables will at once indicate that those counties in which infantile mortality is highest are those in which large industrial operations are carried on, in many of which women are employed, doubtless while they are nursing their infants, or because of such employment either neglect or are unable to perform this maternal duty.

Diseases which contribute chiefly to infantile mortality.—When the diseases which produce infantile deaths are closely analysed, it is found that they may be resolved into well-defined groups. Under these group-headings are embraced different certifiable causes, which, however, are mainly referable to such groupings. A serviceable series of groups is as follows:—(*a*) Infectious diseases; (*b*) diarrhœal diseases; (*c*) tubercular diseases; (*d*) meningitis and convulsions; (*e*) lung diseases; (*f*) wasting diseases; (*g*) other causes.

Under the head of diarrhœal diseases are grouped those certifiable causes of death which are referable to the gastro-intestinal tract—viz., diarrhœa and epidemic diarrhœa, enteritis (infective), English cholera, gastric catarrh, enteritis, and gastro-enteritis. The heading "tubercular diseases" includes phthisis, pulmonary tuberculosis, tuberculous meningitis, tuberculous peritonitis, tabes mesenterica, general tuberculosis, and tuberculous diseases of any other part of the body. Under the heading of "wasting diseases," however, are grouped very dissimilar conditions: thus are usually included such unlike conditions as immaturity or premature birth, injury at birth, congenital defects and deformities, atrophy, birth debility, and marasmus.

If we divide into percentages the mortality per 1,000 infants under 1 year in England and Wales from these different groups of diseases, we shall be able to arrive approximately at their relative incidence. In 1891, for example, the mortality per 1,000 births was 164 for males and 133 for females for all causes respectively. Of the 164 deaths per 1,000, infectious diseases contributed 5·5 per cent; diarrhœal diseases, 9·15 per cent; tuberculous diseases, 6·1 per cent; meningitis and convulsions, 15·8 per cent; lung diseases, 20·74 per cent; wasting diseases, 28·65 per cent; and other causes, 14 per cent. Of the 133 female deaths per 1,000, these groups gave the following percentages—viz., 7·5, 9·8, 6, 15·04, 20·3, 28·56, and 12·8 respectively. In the year 1900 the male mortality had risen to 169 per 1,000, and, following the same grouping of classes of causes, these groups contributed the following percentages—viz., 5·9, 19·5, 4·74, 13, 16·56, 29·5, and 10·65 respectively. In the same year the female mortality had risen to 139 per 1,000, and was composed of the following percentages of the above group headings—viz., 6·5, 20·15, 4, 12, 15·8, 28·8, and 12·2. It will be observed that in the above-named groups nothing has been said of congenital diseases such as syphilis, although it is within the experience of most practitioners that it is by no means unknown. Probably it is included under some other designation, for reasons which will probably suggest themselves to those engaged in practice.

In Glasgow, in the year 1899, the number of infants who died before they had attained the first year of life was 3,686. Of this total, 6 per cent died from infectious diseases (measles and whooping-cough), 16 per cent from diarrhœal diseases, 20 per cent from respiratory diseases, 7 per cent from nervous diseases, 13 per cent from birth debility, &c., and the remaining 36 per cent from other causes. Diarrhœal diseases in infants vary much in incidence according to the season of the year. They may be said to rapidly increase in number in the month of July, to reach their maximum in August and September, and to diminish rapidly thereafter in the early winter months. But, as their incidence very largely depends upon unclean vessels by which the nourishment is given to infants, they are found to prevail more or less throughout the year. Budin, who has given much attention to the subject of infantile mortality in France, has recently recorded the fact that, out of every 1,000 infants who die in Paris, 380 die from diarrhœa; in Rouen, 510; in Dijon, 584; and in Troyes, 682. And in the *Journal d'Obstétrique* for January, 1903, the same observer states that of 69 infants who died of diarrhœa at Boulogne, only 8 were suckled by the mother, 20 were brought up on the bottle, and 41 were fed on different forms of food.

The following tables illustrate the condition of infantile mortality in Scotland:—

TABLE IV.—INFANTILE MORTALITY PER 1,000 BIRTHS IN THE PRINCIPAL TOWNS OF SCOTLAND.

	1891.	1900.
Glasgow, ...	166·9	172·8
Edinburgh, ...	140·5	154·0
Dundee, ...	203·2	199·2
Aberdeen, ...	149·8	177·8
Leith, ...	145·1	135·2
Paisley, ...	157·8	144·7
Greenock, ...	161·6	152·5
Perth, ...	114·3	145·6
Kilmarnock, ...	135·0	128·8
Govan and Partick, ...	...	156·1
Coatbridge, ...	...	145·9

If we contrast the incidence in infantile mortality in Scotland generally with those of different areas characterising differing groups of population living under diverse circumstances, a better opinion will be obtained of the differences which obtain therein. The following table gives such particulars with respect to the years 1891 and 1900:—

TABLE V.—INFANTILE MORTALITY IN SCOTLAND IN DIFFERENT GROUP AREAS PER 1,000 BIRTHS AND FOR BOTH SEXES UNDER 1 YEAR OF AGE, FOR THE YEARS 1891 AND 1900.

	1891.	1900.
Scotland, ...	127·8	128·5
Principal town districts, ...	147·2	146·9
Large town districts, ...	129·7	135·3
Small town districts, ...	126·5	121·3
Mainland-rural districts, ...	95·3	94·5
Insular-rural districts, ...	95·1	75·0

It is a well-established observation regarding the deaths of infants that about one half of all children who die before the completion of their first year do not survive the first three months of their existence. This is brought out in the following tables:—

TABLE VI.—FOR 1891.

	Total Births.	Under 3 Months.	Under 6 Months.	Under 12 Months.
Scotland,	125,986	8,211	2,890	5,009
Principal towns,	52,407	3,782	1,333	2,598
Large towns,	15,883	1,077	368	615
Small towns,	26,860	1,700	672	1,026
Mainland-rural districts,	27,977	1,499	476	692
Insular-rural districts,	2,859	153	41	78

TABLE VII.—FOR 1900.

	Total Births.	Under 3 Months.	Under 6 Months.	Under 12 Months.
Scotland,	131,401	8,626	3,220	5,042
Principal towns,	57,089	4,131	1,604	2,652
Large towns,	18,686	1,245	500	783
Small towns,	28,459	1,804	640	1,010
Mainland-rural districts,	24,582	1,317	453	555
Insular-rural districts,	2,585	129	23	42

Causes of high prevalence of mortality.—All the causes of infantile mortality may be divided into two classes:—(*a*) Unavoidable; (*b*) preventable.

Under the heading *unavoidable* may be included such as the following, viz., (1) Premature birth; (2) injury at birth; (3) congenital defects and deformities; and (4) congenital diseases.

There is no doubt that there is much waste of infant life due solely to marriage between parents of unhealthy stock. There seems to be clear proof that the procreative faculty is not confined to women of robust or even good health, but is existent in no small degree among women who enjoy only indifferent or even weak health. Such women as the latter beget children who have just sufficient vitality to enable them to be born alive, and then, shortly thereafter, to die. It almost seems disheartening that, notwithstanding generations of educative facilities and the growth generally of the knowledge of the simple truths of hygiene, men and women are so little alive to the subject of fitness in matrimony. It is, indeed, not too strong to say that less care is being exercised in the present day in the marital unions of human beings than in the mating of prize cattle or horses. Such a cause as this must be looked upon as irremediable or unavoidable so long as unfit marriages continue, and it is hardly likely that a State will lightly intervene in this matter. It is obvious, further, that, irrespective of the best sanitary environments and circumstances, weakly infants will be born of such marriages only to swell the infantile death-toll. Sanitarians and statisticians must, therefore, reckon in the future; as in the present, with these unavoidable causes.

Under the head of preventable or avoidable causes may be placed the following, viz., (1) Insanitary domestic surroundings; (2) vicious and objectionable habits and modes of life of parents; (3) effects of parental poverty; (4) occupation of mothers during the early months of child-nursing; (5) wilful or compulsory abstinence on the part of mothers from nursing their offspring; and (6) physical unfitness of mothers for that duty, owing to different prime causes.

There is behind some of these causes the record of much hardship, misery, and despair; not a little heartlessness, cruelty, neglect, unmotherliness; and a great deal of all that indicates the absence of maternal instinct for the care of offspring. The combined effect of these causes is, without question, a deplorable wastage of infantile life, much of which is, or ought to be, preventable.

Infantile mortality in relation to declining birth-rates.—The prevalent high rates of infantile mortality reach a higher significance because of the gradual diminution which has been taking place during the last thirty years in the numbers of children born. In certain countries, indeed, it has rightly become a matter of national concern. It is significant that, with the probable exception of Germany, decline in the birth-rate is a noteworthy feature of most of the nations of the world. France has become a stationary population, and barely makes ends meet in its balance of lives. Italy possesses as yet a small balance on the right side. In America, President Roosevelt has had to draw the attention of his people to this, and designates the prevailing conditions as "race-suicide." Even in such young colonies as New Zealand the same element of diminution has to be recorded. Estimated per

1,000 of the population, the birth-rate of that colony has fallen from 40·78 in 1880 to 26·34 in 1901. Indeed, the annual increase of population in New Zealand is only better than that of France by the very small margin of 3 per cent. Coming nearer home, the same condition of reduced and falling birth-rates is found. Taking the United Kingdom as a whole, this declination has been steady since 1876. In that year, in England and Wales, the rate was 36·3 per 1,000 of population. In 1899 it had fallen to 29·2. In Scotland, in the decennium 1861-70, the rate was 35 per 1,000, and in 1891-1900 it had fallen to 30·70 per 1,000. Even in Ireland, which has always been noted for relatively lower birth-rates than Scotland or England, the same fact is to be recorded. In 1880 the rate was 24·7 per 1,000, and in 1901 it had fallen to 22·7. This fact for the United Kingdom may be expressed in a different way. If the figures for the United Kingdom be taken roundly, the decline in the birth-rate indicates that, in a total population of forty-one and a half millions, there has been an annual deficiency of about 250,000 infants reckoned on the rate which obtained in 1875. Or, to put it in another way, if the birth-rate for 1875 had been maintained up till 1900, the number of children born would have been approximately five millions more than the number which was actually born within these years.

If, then, we connote the high prevailing infantile mortality, which seems to persist in spite of advancing sanitation, and the gradually declining birth-rate, the significance of the relationship, and the need for enquiry on the part of statesman and sanitarian alike, become the more obvious.

Preventive measures.—It is quite apparent that the provisions of the Acts of Parliament for the protection of infant life, while they doubtless have contributed to prevent loss of lives by baby-farming and to remove the possibilities of over-insurance of infant lives, have done but little to conserve infant life generally. It would appear, indeed, in view of the many causes which tend to wastage in infant life, as if the institution of preventive measures must depend jointly upon the State, municipalities, and the medical profession. As has been said, it is not likely that the State will attempt to enact any measure which had for its object the prevention of unsuitable marriages between persons of unhealthy stock. Much might be said of the advantages which would likely follow the passing of such a measure, but it is not within the region of practical politics. In view, however, of the fact that so many child-bearing mothers are employed in certain industries, and that such mothers are in the habit of resuming employment soon after delivery, it is a reasonable proposal that an Act should be passed whereby women should not be permitted to resume their work until the completion of a full month after delivery. This would be quite in keeping with certain provisions of the Factories Acts, which had for their object the prevention of inimical effects upon young persons and women employed in factories. Surely, if it be of importance to conserve the lives of such young persons and women, it ought to be the object of the State to preserve, as far as it can, the lives of the children who, if they survive, are to become the workers of the future. Not a little hardship would be likely to follow the passing of such a law at first, but that it would be salutary there cannot be the least doubt. The duty of municipalities or local authorities in this matter will be subject to much discussion. These duties seem to me, however, to be divisible into two classes—viz., administrative and educational. Keeping in mind that much of the infantile mortality is attributable to negligence and ignorance, both conditions will have to be fought, and, if possible, overcome. It has been too much taken for granted that all women who have borne children are instinctively able to care properly for them. This doctrine must be accepted only with misgiving, especially when applied to certain classes of our female population. It is quite true that enlightened communities, through the agency of sanitary and registration offices, have for long been distributing pamphlets explanatory of the best modes of caring for and rearing children; and such a practice is good, as far as it goes. But the fact remains that no benefit, so far at least as is discernible in infant death-rates, has yet accrued from the practice. Something more evidently requires to be done. It appears to me that nothing short of practical demonstration of approved methods of rearing children, and especially of the artificial methods of feeding children, in cases where lack of maternal milk supply, or necessity to work, prevents natural feeding, will suffice. Not only so, but even where infants are fed at the breast, many mothers require to be educated respecting times of feeding. Such a duty might, with great advantage, be imposed on trained women appointed for the purpose; and such women might, with further advantage to the poorer classes of the community, inculcate the need for, and indeed supervise, cleanliness of the home. Experiments of this kind have already been made, and have been followed with beneficial results.

One such experiment may be instanced. In Salford, where one of the latest experiments was made, the average infantile mortality per annum between the years 1895 and 1900 was 211 per 1,000 births, and in 1901 was 205 per 1,000. By reason of these very high rates, the Council determined to try means toward reduction, and they appointed trained women to the district of the town called Greengate. In this district the infantile mortality in 1900 was 224 per 1,000 births; in 1901, 246 per 1,000; but in 1902, after the conclusion of the year's experiment, it fell to 178 per 1,000. While it would not be legitimate to infer from these figures that the reduction was solely due to the nature of the experiment, it would be quite fair to say that the experiment was likely to be a not unimportant factor.

In this district, during the currency of the experiment, the feeding of 494 infants was carefully observed and supervised. Of that total, 384 infants were reared exclusively on the milk of the mother, and 39 died, giving a death-rate of 104 per 1,000; 65 others were fed on food supplementary to the milk of the mother, and of these 10 died, showing a death-rate of 154 per 1,000; 30 were reared artificially on the milk of the cow, of whom 12 died, the mortality being at the rate of 400 per 1,000; 25 were fed on other food, of whom 11 died, showing a rate of 440 per 1,000.

Such figures as these, which might be multiplied indefinitely, are more eloquent than words to show the pernicious effects of improper and injudicious feeding. It is not to be wondered at, therefore, in face of this deplorable wastage of infant life, that sanitary authorities have been seeking a remedy in the direction of improved infantile feeding. It will be readily apparent that whenever an infant is deprived of the healthy milk of its mother, its risks of non-survival are greatly increased. Not only is it in ordinary circumstances subject to the dangers of gastro-intestinal ailments arising from the use of artificial foods, but, in the case of milk, it is specially liable to the dangers which are due to microbic contamination of the milk from imperfect cleanliness of the bottles in feeding, and also to such contamination as the milk may receive from the insanitary state of the house or place in which the supply is kept. This is especially true during those months of the year when climatic conditions tend to the greater activity of those organisms which determine the incidence of infective or epidemic diarrhœa. For these reasons the plan of sterilising milk was first suggested.

This project of sterilising and humanising milk of cows for infant feeding had its origin in the town of Fécamp, in Normandy. The success which attended its use caused further enquiry on the part of certain sanitary authorities who were anxious to prevent, as far as possible, the deaths of infants from causes attributable to bottle-feeding under ordinary circumstances. This practice was followed by the town of St. Helens, Lancashire—a manufacturing town in which many mothers are employed in the public works—on on the advice of Dr. Drew Harris, its medical officer of health. The milk is subjected to a temperature of 102° C. for three-quarters of an hour in closed bottles, is thereafter removed and allowed to cool in the bottles. It is thus perfectly sterilised, and will keep sweet for over a month if retained in the closed bottles. It is obvious that in any scheme of municipal sterilised milk supplies, suitable precautions must be exercised respecting its distribution. Where a woman is unable, for any legitimate reason, to nurse her infant, such a supply, put up in bottles containing quantities sufficient for one meal for infants of different ages, and at a price easily within the reach of such persons, would not only be an invaluable boon to the parent, but would undoubtedly tend toward the preservation of the life of the infant. In order, however, to derive the fullest value from these supplies, some collaboration between hospital dispensaries and the milk dispensers would be requisite. Apart from this, however, much good may be expected where the scheme is instituted.

Establishment of public crèches.—A very slight acquaintance with the problems of the poorer classes quickly shows that not a little of the infantile mortality depends upon the inability of the mother to give the requisite time to the nursing of the child, when for the time being she happens, from the illness or want of employment of the husband, to be the breadwinner of the family. Absence of attendance, or want of intelligent attendance upon the wants of the child, is not infrequently the beginning of the mischief which culminates in the child's death. This may easily happen where the person left in charge is an elder sister of the infant, but who herself may be of tender years, or a neighbour. It appears to me that very important help might be rendered to overcome this difficulty by the establishment of municipal crèches in the poorer parts of a city. It may be said that established crèches in towns have not proved the success which was expected from their institution. How much this has been due to the cost of keep of the child is difficult to answer, but it can easily be imagined that even the small cost which is commonly demanded is a serious item of expense where the woman's earnings are always low.

Much might be further elaborated on this subject generally, but whatever measures are adopted on these lines, municipally or otherwise, the beneficial results which will follow, as has already been demonstrated in France, will far outweigh the cost, since, viewed either from an ethical or economic standpoint, there can be no higher work than the preservation of infant life, and all the more especially as sanitary enactments seem to have failed to lessen the mortality of the infantile section of the community.

Professor Jardine said that recently a great deal had been said about deterioration of the race. He had taken the average weight of 100 full-time children born in the Maternity Hospital in 1866, and he had found that it worked out at 7 lb. 3⅓ oz. Similarly, the average in 100 born in the beginning of this year had given 7 lb. 9⅓ oz., or a gain of exactly 6 oz. The number was not a very large one, but he thought it was quite sufficient to prove that, at all events, their was no deterioration in the infants prior to birth. If there were deterioration, and he was afraid there was, it arose later from improper feeding and insanitary surroundings—especially from the want of sunlight and fresh air.

The subject of rickets was a very important one in Glasgow, and although it might be somewhat outside the scope of the present discussion, he would like to draw attention to statistics of the Glasgow Maternity Hospital which he had published some years ago in the third volume of the *Glasgow Hospital Reports*, and also in his *Clinical Obstetrics*. Between 1869 and 1878, in the outdoor cases, 4 craniotomies were done (1 in 2,138); and in the indoor cases, 2 craniotomies (1 in 1,480) and 2 inductions of labour (1 in 1,480). Between 1879 and 1888, in the outdoor cases, 20 craniotomies were done (1 in 620); and in the indoor cases, 38 craniotomies (1 in 76), 10 inductions of labour (1 in 296), and 3 Cæsarean sections (1 in 987). Between 1889 and 1898, in the outdoor cases, 16 craniotomies were done (1 in 1,260) and 3 inductions of labour (1 in 6,718); in the indoor cases, 112 craniotomies were done (1 in 39), 91 inductions of labour (1 in 48), and 56 Cæsarean sections (1 in 77). He also stated that in 1903 the average of badly contracted pelves treated in the hospital had been 1 in 7. The figures showed that during the fifties rickets must have been a comparatively rare disease, because it must be borne in mind that these patients were at least

20 years old. Then there must have been a sudden great increase. Now, what was the cause of this? It was not a question of bad times, because during that time there had been undoubtedly hard times among the poor, but there had also been spells of good times without any appreciable diminution of the disease.

Within recent years sanitary science had done much in the slums, and he was of the opinion that rickets was on the decline. The Maternity Hospital statistics did not show this as yet, but fifteen or twenty years hence he was quite confident there would be fewer contracted pelves to deal with than at present. At present they were dealing with cases that had arisen twenty or more years ago, when the disease was extremely prevalent.

As regards the children of these rickety women, they were quite healthy and well developed at birth. He had never seen a case of fœtal rickets among them, and there was no record of any such in the hospital books.

As Dr. Chalmers had based his statistics on the deaths which had occurred in 1902, he (Dr. Jardine) had thought it might be of interest if he gave the statistics of the outdoor department of the hospital for that year. In all, 2,091 cases had been attended at their own homes, and of these 35 had aborted and 151 had had stillborn children—42 from accidents at birth (*i.e.*, where there had been difficult deliveries by forceps, versions, and craniotomies), 41 in which no cause was given, 43 macerated fœtuses, 24 premature, and 1 monster. Five children had died within a week, and 1 in the second week. Seventy-three children per 1,000 births were thus born dead. Of the 43 macerated fœtuses he was quite sure that syphilis played a large part in the cause, and the same might be said of the premature births. Syphilis was a disease which must be taken into account in dealing with infantile mortality, and, as they were aware, the registrar's returns could not be relied upon in respect to it.

There was little doubt that the terrible mortality in infants was very largely due to improper feeding. Improper feeding of the mothers would undoubtedly tell upon the infant in lessening the mother's supply of milk, but he did not think it had much effect upon the fœtus *in utero* unless the starvation was extreme. In a case of excessive vomiting of pregnancy, where the mother had become extremely emaciated, the fœtus had suffered to a like degree. In the siege of Paris and in the times of famine he believed the infant mortality had been lower than usual, due, no doubt, to the mothers suckling them.

Mother's milk was the proper food for the child, but, unfortunately, many mothers were unable to nurse their children. There were, of course, some who could but would not do it, but it was a fact that there were many who were quite willing and anxious to do so but could not. In all his private cases he insisted on the mothers nursing if they were healthy, but in quite a number he found they could not do so. Pasteurised cow's milk and cream was the best substitute for mother's milk, and if it was properly prepared, and the bottles carefully attended to, the children would do well on it.

Among the poor there was great difficulty in getting them to take proper care, and the results were often disastrous. The wonder was that any of the children lived. The pasteurised and sterilised milk supplied by the dairies he had found not satisfactory. For the poor it was better than the ordinary milk, but if possible the milk should be prepared at home, night and morning. Unless some means were taken to educate the mothers, he was afraid the terrible sacrifice of infants would go on.

Dr. R. Barclay Ness said—You have seen from the figures on infantile mortality presented to you by Dr. Chalmers that Glasgow holds, in comparison with other large towns in England and Scotland, a very good place.

These figures show that the death-rate among infants in Glasgow for the year 1902, for example, was lower than that of Manchester, Birmingham, Liverpool, London, Aberdeen, and Dundee, though it is little higher than that of Edinburgh. Nevertheless, the infant mortality in Glasgow for this year was 128 per 1,000 births, and that, apart from comparisons, for it was unusually low, indicates, indeed, a serious loss of life.

But what standard should be aimed at? On this point Budin, of Paris, gives it as his opinion that deaths of infants should not exceed 90 to 100 per 1,000 births.[1] This is not too low a standard; certain organisations have reduced infant mortality even to 69 per 1,000 births.

Now, it has been pointed out that the heaviest mortality is in the first month of life, being in Glasgow for 1902 during that month as high as 340·6 per 1,000 births, as compared with 128 per 1,000 for the whole of the first year. Each month after the first shows a gradual reduction, with the exception of the eighth, during which there is a rise in the death-rate, presumably connected with the disturbances common at the period of dentition.

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[1] *British Medical Journal*, 26th September, 1903, pp. 764, 765.

From these figures it would appear that if any very great reduction in the death-rate of infants is to be brought about it must be by measures which will influence the death-rate of the first month. It is during this month that weaklings die. How are these to be diminished in number? Stronger infants can only be brought forth by healthier parents, hence the necessity for diminishing the prevalence of tuberculosis, syphilis, alcoholism, &c.; for dealing with the sanitary conditions under which people live, especially those connected with the one apartment houses; for taking greater care of the women during the latter months of their pregnancy, and for rendering them efficient aid during their confinement.

Such measures would tend to diminish the number of premature births, the births of weaklings, and the birth of children injured during delivery. It would also ensure the safety of the mother and her ability to nurse the child.

The points raised here cover a very wide field, but are none the less important in any organised attempt to deal with the question. But the very breadth and extent of the subject may tend to make the practical physician feel that the business lies outside his province, and that it is more for public sanitary authorities, like our medical officer of health and Professor Glaister, than for him.

Dr. Jardine has presented to you some practical suggestions from his experience at the Maternity Hospital; my views have taken shape from my experience at the Sick Children's Hospital, and, I believe, while recognising that great social and sanitary problems must be solved before a great reduction in infant mortality can be brought about, that a very substantial difference may be made by measures directed chiefly towards the care of the children themselves.

Causes.—If we consider what are the most important causes of death during the first year of life, we will find, according to Dr. Chalmers' table, that there are three—(1) immaturity, (2) diseases of digestion, (3) diseases of the respiratory system. The first go to increase the death-rate during the first month, and represent to some extent Dr. Chalmers' refractory element, but the second and third represent what Professor Glaister has spoken of under the heading of preventable diseases.

My experience at the Dispensary of the Sick Children's Hospital is with the latter, and as they affect children above one month. Infants under one month are rarely brought to the dispensary, and when they are it is usually on account of some injury received at birth or some congenital malformation.

Of 9,109 new cases (children under 12 years) who attended the dispensary during 1902, 5,340 were medical and 3,769 were surgical. Dealing with the medical cases only, it was found that half of these were equally divided among three classes—(1) respiratory diseases, (2) gastro-intestinal disorders, (3) rickets, a condition closely associated clinically with the first two. The other half of the medical cases was distributed among the other disorders of childhood.

This shows how common these diseases are among children, and when we consider the fact that 1,790 of these medical cases were under 1 year—that is, more than one-third of the whole number representing children under 12 years of age—we find that we are dealing at least with two classes of the diseases which appear in the registrar's returns as causing death among infants. Though rickets is not reckoned as an important cause of infant mortality, the above figures indicate how prevalent the disease is, and should be taken as pointing to the prevailing conditions of child life.

These cases usually come from small overcrowded houses, they breathe a vitiated atmosphere from morning till night, they get little fresh air by ventilation, and they are seldom taken out of doors. I have read with some care Dr. Chalmers' address to the Royal Philosophical Society "On the Death-rate in One Apartment Houses," and although he was naturally guarded in what inferences he drew from his statistics and was content to indicate that it was the mode of life in these houses that was at fault, yet there could be no more convincing proof offered than he has done of the fact that the diseases from which child-life suffers is largely associated with the surroundings in which the children live.

Admitting the fact, let us pass from this aspect of the question with the hope that a gradual amelioration of the conditions referred to will take place, and let us consider some points connected with the two important causes of infant mortality already referred to—(1) gastro-intestinal disorders, (2) respiratory diseases.

Gastro-intestinal disorders.—In connection with gastro-intestinal disorders of infants, I would refer, in the first instance, to the unwillingness or inability on the part of the mother to suckle her children. It is true, I think, that very often women in the upper ranks of society are unable to nurse their children, but many who are able find it inconvenient. As a general rule, on the other hand, the women of the middle class are both able and willing, while those of the lower class are willing but often unable owing to the outside duties that devolve upon them. This lies at the root of the matter. The infants that suffer from gastro-intestinal disorders are bottle-fed children.

Cautley[1] states that in Norway and the Faroe Islands, where infants are mostly breast-fed, the mortality falls as low as from 8·5 to 10·5 per cent; while in such countries as Iceland, Bavaria, Austria, Hungary, and Spain, where infants are fed largely on farinaceous food, the mortality rises as high as 30 per cent. At the siege of Paris and during the Lancashire cotton famine, the infant mortality was largely reduced, while the adult mortality increased, because the mothers naturally kept their infants at the breast.

Dr. Cameron, of Leeds, has also showed that of 153 cases of diarrhœa among infants which he investigated, 18 per cent were on the breast only, 14 per cent were on the breast partially, 68 per cent were not on the breast, while 76 per cent were on the bottle wholly or partially.

In France the question of infant mortality is a far more serious one than it is at present in Britain, because of the very marked diminution in the birth-rate—a fact which is beginning to present itself in this country too, but which is still counterbalanced by the gradual diminution in the general death-rate.

In France, Zola was led to deal with the question in one of his later books—*Fécondité*—in which he tried to awaken the nation to the reality. In one passage he makes the doctor say, "It may be all summed up in this verity, 'It is a mother's duty to suckle her child,' . . . when we know how to worship motherhood our country will be saved, and this is why I should like a mother suckling her babe to be adopted as the highest expression of human beauty."

France, because of its greatly diminished birth-rate, and the gradual depopulation that is consequently taking place, has been forced to adopt wider measures for the preservation of infant life than any other country. Among the many institutions established for the purpose are the "Hospital Consultations for Infants."[2] To these hospitals women are admitted for their confinements, free of charge. They are induced to suckle their infants, and even after they leave constant supervision is kept up, whereby the child is reared in most cases on the breast. If for some reason the mother is absolutely unable to suckle the child, she can get pure sterilised milk at the hospital daily.

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[1] Cautley, *The Natural and Artificial Methods of Feeding Infants and Young Children*, second edition, pp. 7-9.

[2] *British Medical Journal*, 25th April, 1903, pp. 974, 975.

Statistics show the advantage of such a system. At the Clinique Tarnier, of 527 infants, only 23 died; of these latter 3·12 per cent were breast-fed, 12·50 per cent had mixed feeding, while 10·10 per cent were reared altogether artificially. Among all these cases there was not one of gastro-enteritis.

This indicates what supervision will do, and it points out the lesson that some organisation should be set up for the express purpose. It is a question for the Maternity Hospital whether or not it would have an outdoor department of this kind conducted on the same lines. The difficulties are obvious, but the advantages would be very great, the most important being that the mother would be constantly reminded of her duty to the child.

Artificial feeding.—However much we deplore the fact that mothers do not nurse their children at the breast as they should, the problem presented at the Children's Dispensary as elsewhere is how best to feed the children artificially who cannot be reared in the natural way. It is surprising that so many bottle-fed children live at all. They are constantly brought up to the dispensary drinking from tubed bottles sour-smelling milk, which will turn blue litmus paper quickly red from excessive acidity, the result of lactic acid fermentation, the child meanwhile suffering from symptoms of gastro-intestinal catarrh.

At this dispensary everything is done to bring about a radical change in their methods of feeding infants. A proper bottle at cost price is even supplied if necessary. Instructions, both verbal and printed, are given as to procuring and preserving the milk; also, its modification to suit the age of the child, the use of such diluents as limewater and barley-water, &c.; the quantities to be given and at what intervals; the cleansing of bottles, &c.

It is obvious, however, that among this class certain essentials to the proper feeding of the infant may be absent. The milk obtained may be good or bad; when obtained it is too often kept in a vitiated atmosphere for hours before it is used; the modification of the milk is too often imperfectly carried out.

Pure milk.—The most important point of all is whether or not the child obtains pure milk; and Dr. Chalmers has adopted the sound position, namely, that it must be the first aim of the community to obtain a pure milk-supply. Milk may satisfy the required standard in having a sufficient amount of cream or fat, yet it may be altogether impure as judged by a proper bacteriological standard, and it has to be remembered that sterilisation can never convert impure milk into pure milk.

If the Glasgow Corporation would establish an ideal farm which would supply milk to all the fever hospitals, and the general hospitals if desired, and established milk depôts in the city for the supply of *pure milk for infants*, this would be the first step in the right direction. At the present time this pure milk is not supplied, and the farmers are best to know it by some practical lesson such as this.

Milk depôts would be a great advantage to the community, and would exist for two purposes—the supply of

1. *Pure milk.*—Milk obtained as pure as possible and cooled quickly, or pasteurised at a temperature of 158° F., or sterilised at a temperature of 212° F.

2. *Modified milk.*—That is pure milk, sterilised or pasteurised, and modified to suit the child at a particular age. Such milk, supplied in a series of bottles, each containing the necessary quantity for one feed, would be a great boon to the poorer class of the community. Under any circumstance the milk mixture given the infant must be infinitely better than that made up by the mother in her own way at home. The establishment of milk depôts by the Corporation of this city must be accepted as an effort to assist in a practical way those mothers unable to modify the milk for themselves. It is to be hoped that this will tend to diminish the gastro-enteritis so common among bottle-fed infants; possibly influence, too, that severe form of this condition, epidemic diarrhœa, which is the result of an acute toxic poisoning, occurring commonly during the third quarter of the year, by milk undergoing rapid changes under the influence of bacterial poisons. This condition is particularly fatal to young infants. They succumb often with very few symptoms, and often from an attack apparently mild at the onset.

The real advantage, then, of these milk depôts is to prevent the gastro-intestinal disorder to which the child is liable. But anyone who has had much experience in the feeding of infants will acknowledge how difficult it is often to get cow's milk to agree with the child, and how necessary it is to study the requirements of each, and modify the various ingredients of the milk accordingly. One could scarcely, therefore, expect that the same modification of milk will suit all children under 3 months, yet this is often the weakest milk supplied at such depôts.

One test, among others, as to the suitability of the milk for the child is the gradual increase of weight, and a record of this should, therefore, be kept for each child receiving the milk. If the child is not gaining weight, the milk is not suitable, and there will be other indications that the milk is not agreeing with the child. The milk will then require further modification, and this must be indicated by the one in charge of the depôt. This, I think, can only be done in an efficient manner by a physician who understands the percentage methods of modifying milk, and who knows how to deal with the milk so as to prevent undesirable effects.

If this is true with regard to more or less healthy children, it is more particularly so with regard to children who are already suffering from a more or less acute form of gastro-intestinal catarrh. These cases have to be treated by the general practitioner or at the dispensaries, and the milk for these require to be modified to a still greater extent than is necessary for healthy children or children only slightly disturbed by improper feeding. I would, therefore, point out the great advantage a milk depôt would be if carried on in the neighbourhood or in association with an institution like the Children's Dispensary, where the milk would be supplied according to the prescription of the physician. The advantage to the infant, I believe, would be greater than would be derived from much medicine. There would also be greater opportunity of testing the efficacy of the system.

Hospital treatment of infants suffering from acute gastro-intestinal disorder, especially the epidemic form, is necessary in view of the fact that the recognised treatment of these cases has often to do with such measures as will rid the gastro-intestinal tract of the poisons, and others that will counteract the depressing effect of these, *e.g.*, stomach washing, purgatives, irrigation of the colon, hot baths, saline injections, stimulants, drugs; yet of all serious cases among children these at the present time derive least help from hospital treatment. Cases of acute gastro-intestinal catarrh often run a very rapid course, and end fatally within a short time, therefore they should be admitted early.

A few of these cases are admitted at the present time on the plea of urgency, the only plea which is of avail, there being no infant wards in connection with our hospitals.

Respiratory diseases.—This is the other large group of diseases which has to do with infant mortality, and is more intimately connected with the vitiated atmosphere of the over-crowded houses than the gastro-intestinal cases just considered. These conditions are often secondary to rickets, whooping-cough, and measles, though the last is not so common among infants. Where these cases are independent of infectious disease, I think more provision should be obtained for them also in hospitals by the establishment of infant wards.

With regard to the treatment of bronchitis and bronchopneumonia as a complication of whooping-cough and measles, more advantage should be taken of the municipal facilities. These cases, if the mother will take them, should be sent to the fever hospitals, and they should be treated there for the pulmonary complications, even though the period of infectivity might be considered past, because these children are not admitted into other hospitals, even at a late date, for fear of infection.

Illegitimacy.—The next point for attention is illegitimacy. It is a notable fact that illegitimate children under 1 year die at almost twice the rate of legitimate children. Thus, in 1902, the death-rate for legitimate children was 126 per 1,000 births, while for illegitimate children it was 244. This may be shown to be true year after year, and, in Dr. Chalmers' words, "too faithfully reflects the systematic neglect to which many of them are exposed." If personal experience is of any further value in view of these figures, it may be said that at the Sick Children's Dispensary the fact is very apparent. It is not an uncommon occurrence for a thin, wasted, neglected infant to be brought up for treatment, not by the mother, but by some relation, a friend, or some one who has lately adopted the child. The story is such as to show that the child has passed from one person to another while the mother is trying to make her livelihood, and that the infant has been fed without any care as to what the nature of the food should be, with the result that the child, though fed, is starved, and soon presents the picture of neglect, and "no one is to blame." There is little doubt that these infants should be taken from among the hands of those who care so little for their welfare; even a mother who no longer desires to have her child should be relieved of it.

The above figures show that whatever agencies are already at work to save these children, they require to be largely supplemented.

Crèche.—In conclusion, I would refer to the crèche or day-nursery, which is of great assistance to those mothers who are forced to work for their livelihood. These institutions should be more largely supported, and under the charge of women well versed in the artificial feeding of children. Their efficiency would be much enhanced by the assistance which might be obtained from the milk depôts.

NEW APPARATUS FOR THE PRODUCTION OF *X*-RAYS AND HIGH-FREQUENCY CURRENTS.

BY JOHN MACINTYRE, M.B., F.R.S.E., F.R.M.S., M.I.E.E.,

Surgeon for Diseases of the Nose and Throat, Glasgow Royal Infirmary; Lecturer on Diseases of the Nose and Throat, Anderson's College Medical School.

ONE of the problems for workers in this new branch of medical science has been how to keep pace with the rapid development in apparatus. This is not to be wondered at when we consider that the discoveries of the new forces came with great suddenness, and the field of application is exceedingly wide. In no department of surgery or medicine, probably, have such advances been so rapidly made, and discoveries from physical laboratories all over the world, as a result of keen and enthusiastic research, are constantly adding to our knowledge. To keep pace with all the improvements in apparatus is by no means an easy matter, and even the wealthiest institutions find it so. In consequence of this, one may travel through great centres of medical research in this and other countries, and see comparatively poor installations in some of the most famous hospitals. Completely equipped departments for every branch is the exception, and Dr. Bonnefoy, of Cannes, who visited London last year with a view to making a report for the French Electro-Therapeutic Society, stated that the conditions of the London hospitals were behind those of similar institutions in Spain as far as electrical medical equipments were concerned. What constitutes a difficulty in large institutions is even more felt by individuals, and the average medical man, however desirous of fully equipping his consulting-room, finds that the cost is a very serious difficulty.

M. Gaiffe, of Paris, has lately introduced an instrument for *x*-ray and high-frequency therapeutic purposes which has attracted a great deal of attention. The external appearance of the apparatus will be gathered from Fig. 1 (p. 270), and there can be no doubt that it is highly creditable to the firm, which has displayed the usual artistic and beautiful workmanship so characteristic of the French people.

The instrument is used on alternating currents, and those who understand the problems of interrupters will see at a glance how valuable a change of this kind will be if it do nothing more than get rid of these troublesome agents. It is no exaggeration to say that probably no greater nuisance has been felt by workers than the constantly disappointing interrupter of the constant current used with coils. It will be noticed, also, that where medical men are supplied with the alternating current, they start with great advantage in this respect.

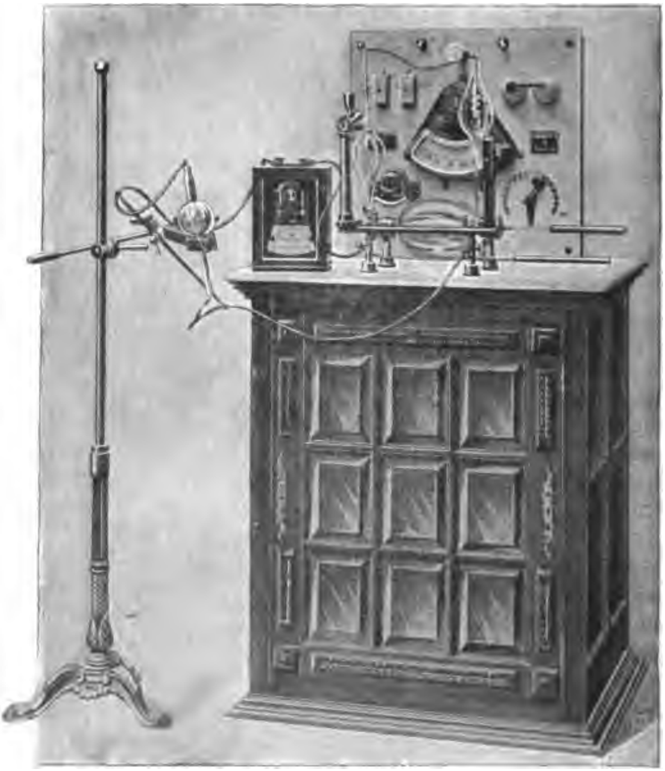

FIG. 1.

Gaiffe's new apparatus for *x*-rays and high-frequency currents.

Briefly stated, then, M. Gaiffe's apparatus utilises the alternating current, gets rid of the troublesome interrupter, and last, but not least, he claims to have placed in the surgeon's and physician's hands means of measuring the current with accuracy, so that one can know from day to day the therapeutic dose which is being given to a patient.

Perhaps the simplest way of describing the construction of the apparatus will be to consider the one which has now been in my possession for some time. To begin with, a motor generator is supplied which transforms the Corporation continuous current into 275 volts, 14·7 amperes alternating, the revolutions being 2,860 per minute. A starting-switch is fitted up, but the one supplied by M. Gaiffe I found deficient, and have replaced it with a no-load and over-load one, made by the General Electric Company. The next part of the apparatus is a resistance board for modifying the current, and on it we have the necessary fuses, voltmetres, and amperemetres.

The alternating current thus under our control is passed into a step-up transformer of 10-inch spark, and here the current is transformed up to 30,000 volts, with a corresponding decrease in amperage. It need hardly be pointed out that in this part of the apparatus there is extreme danger, and, consequently, M. Gaiffe has enclosed it in a case which is kept locked. Further, an arrangement has been made so that if the case be opened the current is immediately broken. This alternating current is then utilised by being sent into a series of condensers consisting of large flat square glasses, and, in the usual way, high-frequency currents are obtained.

An alternating current, however, is of no use for *x*-rays without the ordinary interrupter at least, and consequently, arrangements have been made to utilise Villard's well-known vacuum tubes (or soupapes, as they are called) to do away with one side of the current. By this means, *x*-rays are easily obtained.

That the results have been very striking will be shown from the fact that the screen work for medical examination of the viscera is exceedingly steady, and the control of the whole apparatus is very great. Again, the effleuves from the resonators for high-frequency work are exceedingly fine and very long. When auto-condensation is required, it is quite easy to push the current so as to give the patient one thousand milliamperes. The advisability of giving anyone such a current is another question, which I will discuss at another time, but the arrangements are so made that one can obtain anything from zero to one thousand milliamperes with easy gradations. In Fig. 2 (p. 272) will be seen the special arrangement I have made for the soupapes, and the milliamperemeter, which is used to measure the exact current given to the patient, will be seen placed to the left of the instrument. The illustration also shows the new and powerful resonator and solenoid for couch work which have been devised.

The claims put forward by M. Gaiffe for the apparatus are numerous. To make matters clear, it should first be stated that there is nothing new in the principle. Anyone familiar with Tesla's experiments will know this, but there have in the past been many difficulties to overcome. There is one statement of Gaiffe's which is deserving of special attention. He considers that the difficulty of using an alternating current without an interrupter has been great, that ordinary Ruhmkorff coils will not stand the strain and rapidly break down. I have made special enquiry on this point from Mr. Schall and Mr. Apps, of London, and both declare that they have never had such an experience, although the latter tells me that his coils are constantly being used on the alternating current for the production of ozone. It is true these makers are quite familiar with small motors (say, like those on the jet interrupters) being pierced by high-frequency currents, but the

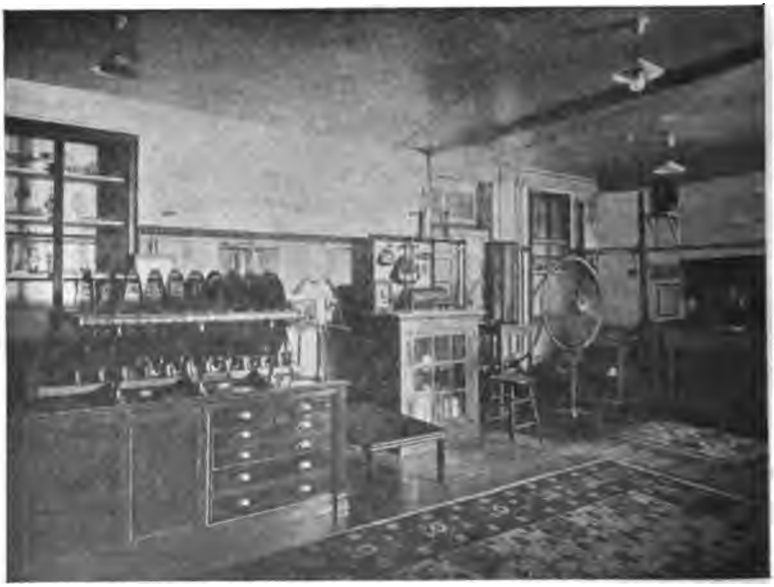

FIG. 2.

Arrangements for soupapes employed by the author.

trouble can largely be overcome by arranging a short rheostat without self-induction, *e.g.*, a graphite rod parallel to the motor and between the high-frequency and the motor. Other makers hint that this great difficulty evidently does not exist with all coils, meaning thereby that coils of some firms are better than others. Of course, it is an understood thing that the closed circuit transformer requires better winding and greater insulation than an ordinary coil, and certainly the instrument which M. Gaiffe has constructed seems an excellent one.

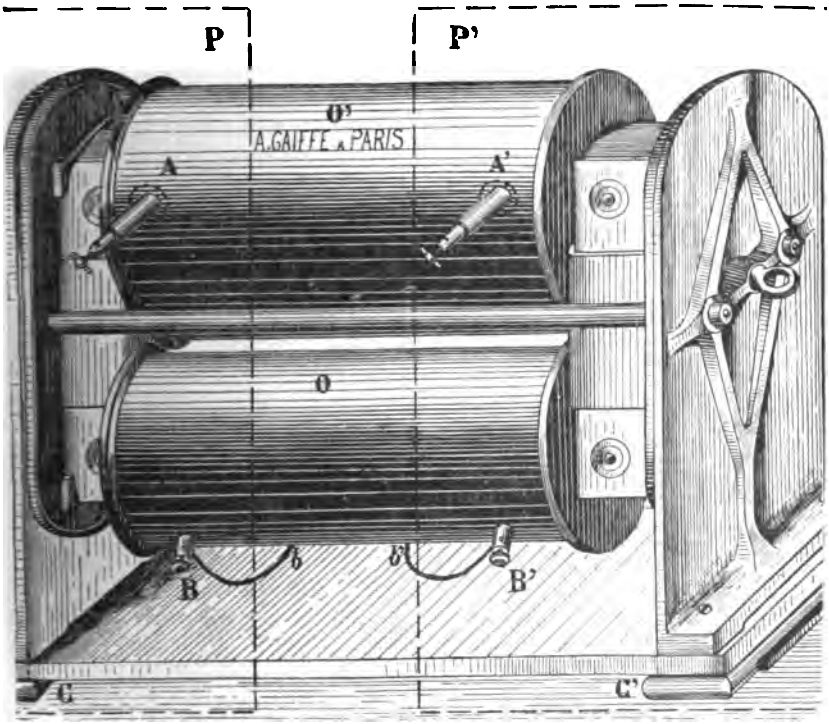

Fig. 3.
The closed circuit transformer.

Professor D'Arsonval and M. Gaiffe have made a series of observations with a view to explaining why transformers and Ruhmkorff coils deteriorated under such strains. They have come to the conclusion that the Hertzian waves which are produced in every high-frequency circuit are propagated in all directions and through all conductors, whether directly

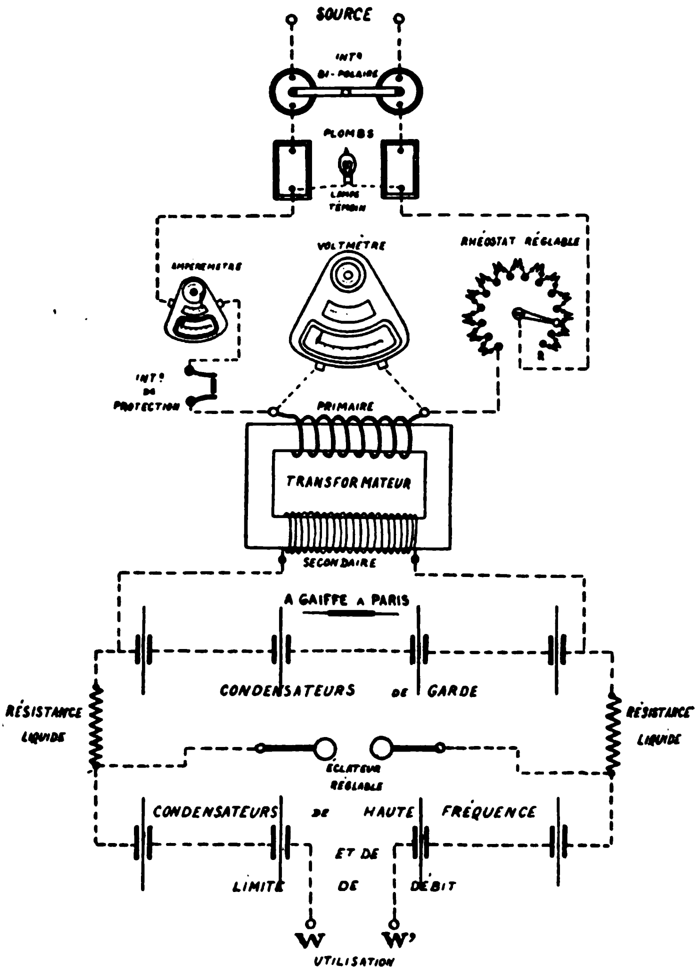

FIG. 4.
Plan of connections and parts of apparatus.

attached to the machine or not—that is to say, by conduction and induction. When the waves, whose length is not great and in which the highest tension is equal to that produced across the spark gap, return behind in the generator of high tension, differences of potential are produced between the different threads of the coil. If insulation be not complete, then the coil breaks down. MM. D'Arsonval and Gaiffe have adopted a plan obviating this mischief, which consists in a combination of condensers placed in shunt directly across the terminals of the transformer, and two water resistances placed between the transformer and the condenser of the high-frequency apparatus, upon which is placed the spark gap. The explanation is that the waves are destroyed by heat effects as they come from the high-frequency system.

Another difficulty which all workers attempting to use alternating currents without an interrupter found was the arc which constantly formed across the discharge rods. Many mechanical arrangements were made to blow this out, which need not here be described. Now, Professor D'Arsonval noticed that the arc was more easily produced when the self-induction of the high-frequency circuit was great, and so decided to place a condenser across the spark gap, at the same time reducing to a minimum by conductors as short as possible the self-induction in the new circuit. This effect is attributed to the fact that the arrangements augmenting the output, on the discharge of the transformer, lower the voltage sufficiently across the terminals of the latter, thus rendering the production of the arc impossible. Similar results may be obtained, although less satisfactorily by the presence of resistances. Fig. 3 (p. 273) shows the very powerful transformer employed in this apparatus, while in Fig. 4 (p. 274) will be seen the scheme of the condensers and rheostats, which are made of plate glass and insulated by air only. A careful study of the scheme, which is a reproduction of the original sketch of M. Gaiffe, will explain the relationship of the different parts of the apparatus from the source of the electric current to the discharge rods.

KOCH'S APPARATUS.

Previous to the appearance of Gaiffe's apparatus in this country, Mr. Schall introduced Professor Koch's to English workers. The principle is practically the same as Gaiffe's, and in many senses they resemble each other, although in certain points there are essential differences. Koch employs the alternating current through a choking coil, a rheostat, and a transformer with closed iron circuit. When used for unidirectional work, a synchronous alternating motor carries a straight metal rod at the end of an ebonite shaft, upon which is fixed the mechanical rectifier. The following advantages are claimed for this system, as compared with coils and interrupters:—The discharges are of long duration compared with those of a spark coil; there is no current in the wrong direction, and, in consequence, the wear and tear of the tubes is smaller and the light steadier than that obtained with any other method. The apparatus is silent, there is no tedious cleaning of interrupters, no repairs in consequence of wear and tear; it is simple to work, the only attention required being the oiling of the bearings of the motor. These advantages are great, and Mr. Schall thinks the apparatus is sure to replace many spark coils wherever they are wanted for hours every day, and especially on alternating circuits.

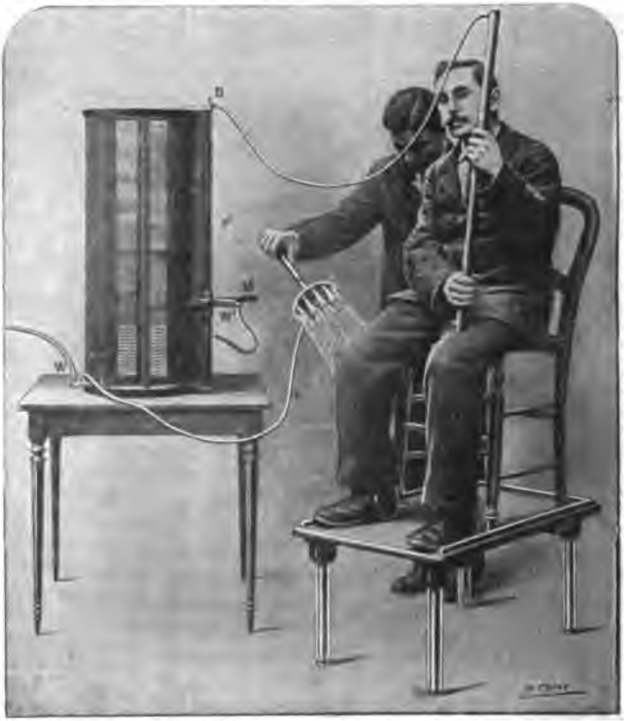

FIG. 5.

Administration of currents, showing effleuves 12 inches long.

It can, however, like Gaiffe's, be used also with continuous current; in this case, a small dynamo has to be connected with the alternating motor (see Fig. 5, p. 276).

Gaiffe has made a large number of experiments to show that when the milliamperage and voltage are recorded of a tube, the same effects can be got from it if the tube at any future time be excited so as to show the same figures. By this means it will be seen that, even before beginning to take a photograph or to give any *x*-ray treatment, it is possible to put the tube into a certain condition.

ADVANTAGES OF THE NEW APPARATUS.

These new instruments will doubtless be first of all valued in centres where the alternating current is employed. Further, there is a risk of these high-potential currents destroying the motor generator, as is shown by the fact that of the first instruments laid down in Scotland, M. Gaiffe's own representative, while fitting them up, seriously injured two. In one case, a new motor generator had to be got from Paris. It is only fair to say that they have now added condensers, which they say will be sufficiently protective to prevent such a thing happening again. Secondly, every worker knows what a nuisance even the best of interrupters has been, and the fact of being able to obtain high-frequency currents and *x*-rays without the use of an interrupter will tempt many to go in for this new installation. Thirdly, the advantage of an installation is great which can measure the current much more accurately either for photographic or therapeutic work. I am inclined to think that M. Gaiffe probably claims a little too much upon this point, because many workers pointed out the advantage of this long ago. The current passing through *x*-ray tubes, even from coils, can be measured by means of a suitable milliamperemeter (one with a moving coil), reading from a tenth to five or ten milliamperes. Personally, I have been using a milliamperemeter between the secondary terminals and my coil and the *x*-ray tube for a long time. However, the interrupter has always been a little difficulty in this respect. Now, by looking at the voltage and the milliamperage, and by employing an osmium or regulating tube, the quantity administered to the patient from day to day can be very accurately measured. Considering the tendency to over-reaction and the disastrous results of burning, this should be a valuable aid to the surgeon. Lastly, M. Gaiffe's machine as it stands is exceedingly quiet, and much more pleasant than the coil to work with, both from the patient's and operator's standpoint, and everything is completely under the control of the operator.

DISADVANTAGES.

To begin with, the apparatus is very costly. In the second place, high-tension currents, after passing from the transformers, are dangerous. It need hardly be pointed out that the risk would be great if anyone touched the high terminals or connections of the transformer giving 30,000 volts with a large amperage. Again, the practical arrangements at present for changing from *x*-rays to high-frequency are rather troublesome, and cause waste of time. Lastly (and this I consider a most serious question, and one to which reference will be made farther on in this paper), do the Villard valves completely destroy one side of the current?

From my experience of M. Gaiffe's apparatus, which I have now had for some time, I am satisfied that for high-frequency work it is likely to prove a very practical machine. At the same time, for the finest radiographic work, where very short or instantaneous exposure is required, it has, so far, not been equal to a large coil with a powerful Wehnelt interrupter. As yet I have seen nothing done by this apparatus which compares with the photographs to be seen in Zeimssen's classical atlas. The explanation may be because it has not been sufficiently long used, and the result a matter of degree. Further, as I have indicated, I am not yet certain that the unidirectional current is completely obtained, and if this be not so, the resulting negatives will not have the clearness and definition required for the highest work. Again, as I have indicated above, the behaviour of different maker's tubes by way of the tendency to lowering of the vacuum is a thing which must be carefully tested before a definite opinion can be offered. Up till now, my experience in this direction has been very unfortunate, and I have already lost several good tubes.

In this connection, it may also be useful to point out that, to a large extent, many of the above advantages can be got at comparatively little cost by means of coils, provided there be an alternating current at our disposal. Not only can interrupters be dispensed with, but accurate measurements can also be obtained by a simple arrangement. Getting rid of the arc between the terminals has always been considered a difficulty.

Long ago I satisfied myself from some experiments which I performed when attempting to get a unidirectional current from the high-frequency apparatus, that by placing a good large condenser between the terminals of the secondary coils and the spark gap, especially when working with large coils, the large flame-like discharge across the spark gap could be got rid of. Mr. Schall has confirmed this in a communication to me, and further experiments since I have received M. Gaiffe's apparatus have proved conclusively that much remains to be done in this direction. With an ordinary 16-inch spark (Dean's) coil, I have been able to get easily one thousand milliamperes on the couch by simply introducing a pair of large-sized Leyden jars in the position indicated, and the effleuve from Dean's ordinary resonator, with an oil condenser, has surpassed anything which Mr. Dean himself has ever seen. Further, it need hardly be pointed out that as in this case, just as in M. Gaiffe's or Professor Koch's apparatus, one would have all the details as to voltage, milliamperage, and periodicity and accuracy in measurement without the troublesome interrupters. Workers possessing an ordinary coil, therefore, may find some hope in the fact that the new apparatus will not altogether displace the old. On the contrary, there will most likely be a place for both.

When all is said and done, however, the steadiness of the screen, the accuracy of measurement, the silent discharges, the fine, long, powerful effleuves with the resonator—all under absolute control—and, lastly, the workmanship of the whole apparatus, in the production of which M. Gaiffe has preserved all the artistic and striking workmanship so common to the French school, are all very impressive, and he is to be congratulated upon his successful results.

A CONTRIBUTION TO THE PATHOLOGY OF THE ANTRUM OF HIGHMORE.

By A. BROWN KELLY, M.D., D.Sc.,
Surgeon for Diseases of the Throat and Nose, Victoria Infirmary, Glasgow.

By the kindness of the late Professor Coats, opportunities were afforded me of examining the nasal cavities and antra of bodies received in the *post-mortem* rooms of the Western

Infirmary, Glasgow. The sole condition imposed, namely, that the subjects should be in no way disfigured, was easily fulfilled in the case of the antrum, but precluded me from thoroughly exploring the other accessory sinuses of the nose. This investigation, therefore, does not deal with the latter, which, however, are much less frequently diseased and of less importance than the antrum.

The following notes are based on the results of the examination of 100 subjects.

The sex, age, and cause of death having been noted, the nasal fossæ were examined by anterior rhinoscopy, and afterwards the antra were opened and thoroughly inspected. Entrance was gained to the antra by a method devised by me which, briefly stated, consists in making an incision in the gingivo-labial fold, exposing the canine fossa by scraping the soft tissues aside, and then by means of special trocars boring a large opening into the cavity through which, with the aid of a speculum and reflected light, the interior is viewed. When freer access is desired, the aperture may be enlarged by chipping away with chisel and mallet the required amount of the anterior wall. Speedy entrance to the maxillary sinus is thus obtained without producing any disfigurement.

In my examinations, I had the advantage of observing the antra a few hours after death and before any important change in the lining membrane—or fluid contents when present—could take place. On the other hand, a cavity having the form and angular recesses of the antrum cannot be examined through an opening made in one of its walls so thoroughly as after exposing it by section. It is possible, therefore, that occasionally pathological changes in the lining membrane of the anterior wall of the cavity may have escaped my notice.

In conducting the present investigation, the following objects have been kept in view:—(1) To ascertain the frequency of the various diseases of the antrum; (2) to note the relation of pathological changes in the antrum to those in the nose, and *vice versâ*; (3) to consider whether the pathological changes found in the antrum bore an etiological relation to the disease from which the subject died.

In the subjoined tables, the causes of death are occasionally indefinitely expressed. This is due to several of the patients having died shortly after admission to the infirmary, and to no complete necropsy having been made. In the absence, thus, of a clinical and pathological report, it was necessary to adopt the terms of the death certificate.

ANATOMICAL VARIATIONS IN ANTRA EXAMINED.

In addition to the pathological changes in the antra, note was also taken of the anatomical variations or peculiarities met with. It is more convenient to consider these first. They were of the following nature:—Asymmetry of the antra, loculation, marked ridges, presence of ostia accessoria, &c.

Asymmetry of the antra.—Asymmetry of the antra was observed in 7 subjects. The irregularity arose from imperfect development of the one cavity, the other being of apparently ordinary dimensions. The normal antrum was the right in 5 and the left in 2 subjects. There was a marked difference between the two antra in all of these cases, and in 4 the smaller cavity was less than half the size of the other.

The non-extension of the cavity downwards into the alveolar process or outwards towards the zygoma, due to defective bony absorption, was the cause of the most marked asymmetry. Bulging of the nasal wall outwards was another factor which contributed in several instances to narrowing of the antrum.

As for the intra-nasal conditions, the septum was normal in 3, and deviated towards the smaller antrum in 4 subjects. The floor of the nose was specially wide on the side of the smaller antrum in 2 instances.

Asymmetry of the face was noticeable in 2 subjects. In these, a depression or flatness below the malar process corresponded to the smaller antrum.

The fact that asymmetry of the antra was found in 7 per cent of the bodies examined reduces the value of transillumination as a diagnostic test.

It is of practical importance to note the appearances met with in opening from the canine fossa an abnormally small antrum, such as those referred to. A vertical partition is encountered, separating what seems to be two cavities, so that one may suppose the antrum to be subdivided. On closer inspection, it is found that the "cavity" next the middle line is the inferior meatus of the nose, and that the "partition" is the inner wall of the antrum bulging unduly outwards, while what was taken to be the inner wall of the antrum is in reality the inferior turbinate.

Loculation of antra.—Two cases of loculation of the antra were met with.

1. Adult male; nasal fossæ normal; right antrum normal; left antrum contained the chief cavity and four smaller apparently closed compartments. Of the latter, the largest was bounded by the inner wall of the antrum and a partition

which passed from the posterior part of this wall to the facial wall. A narrow cavity was thus enclosed, the lining membrane of which was much thickened. The other three compartments abutted on the facial wall. One, very narrow, lay behind the upper two-thirds of this wall, while the remaining two were situated below, their lower boundary being formed by the floor. The posterior part of the antrum was, in addition, partially divided by an incomplete septum, which ran from the facial wall for some distance parallel with the zygomatic wall.

2. Male, 51; hypertrophy of inferior turbinates; polypoid left middle turbinate; right antrum normal; left antrum contained scanty pus, and lining membrane was thickened. A small narrow cavity lay along the nasal wall, and was closed off from the main cavity by a special partition.

Division of the antrum into two or more compartments is of rare occurrence. In the first case here reported, one antrum was multilocular and the partitions were apparently complete; in the second case, the cavity was bilocular, the smaller compartment being narrow and abutting on the nasal wall.

Loculation may mislead us both in diagnosing and treating antral affections. Thus, if exploratory irrigation were carried out in a case such as the above, with a narrow loculus lying along the nasal wall, on perforating this wall from the inferior meatus in the usual manner an error might arise in one of two ways. Either the point of the trocar might enter a healthy loculus and the diseased main cavity be overlooked, or it might traverse a diseased narrow loculus and enter a normal large compartment, on washing out which a negative result would be obtained. Again, if it were necessary in consequence of suppuration to open a multilocular antrum from the canine fossa, and the loculi to escape our notice, these, if diseased and in communication with the main cavity, would nullify the success of the operation.

Besides loculation of the antrum, one should be acquainted with a condition (already described under "Asymmetry of the Antra") which may simulate it. In making a large opening from the canine fossa, a vertical bony partition may be encountered which apparently divides the antrum, but in reality is the nasal wall of this cavity.

Ridges.—A certain amount of ridging of the antrum, especially of its floor, is quite common, but in several cases it was of a marked character. In one subject, two sharp ridges, quarter of an inch high, crossed the floor of the cavity from side to side. In another, a bony ridge like an archway passed from the outer wall along the roof, to terminate at the ostium maxillare. Practically, these ridges are important owing to the recesses they form, and the trouble they thus entail when it is necessary to remove the diseased lining membrane of the cavity.

Ostium maxillare accessorium.—One or more ostia accessoria were present—In 5 subjects, on both sides; in 6 subjects, on the right side; in 5 subjects, on the left side, thus, altogether 21 antra (= 10 per cent) possessed an accessory opening. Zuckerkandl observed 1 in every ninth or tenth case, and Gradenigo in 103 subjects found it in 17 (5 bilateral; 4 right, 8 left).

Occasionally, more than one led into the same antrum, *e.g.*, in 1 subject there were three on the right side and two on the left; another subject had two on the left side; and a third had two on the right side. Not infrequently a depressed and thinned portion of the upper and inner wall of the antrum was noted which would readily have yielded, and thus given rise to an additional ostium.

The two sides presented equally often an accessory opening. Its shape was usually circular or oval, and its diameter varied from 2 mm. to 18 mm.

The condition of the antra having accessory openings was as follows:—8 were normal; 3 contained scanty cloudy fluid; 3 a small quantity of mucus; and 1 blood (due to head injury) —in all 15 the lining membrane was normal. On the other hand, the lining membrane was cystic in 5 cases, and in 4 of these the cysts were situated on the inner wall of the antrum near the ostium accessorium. The comparatively frequent association of cysts of the lining membrane with accessory openings would seem to indicate a relation between the two conditions.

Some writers have regarded the ostium maxillare accessorium as a consequence of a pathological process (Giraldès), and as comparable to a perforation of the tympanic membrane (Harke). Their opinion is largely based on the fact that the ostium is absent in the young. The majority of my subjects with ostia accessoria had passed middle life, but instead of regarding these as due to manifest disease, I think it more probable that an insidious thinning of the membranous wall between the nose and antrum occurs and ends in their formation. Is it possible that the same process favours a cystic degeneration of the neighbouring antral lining membrane, and so leads to the association of the two conditions?

The presence of an accessory opening, which is not difficult to find in the living subject, allows of fairly easy entrance to the antrum, and consequently of its being readily irrigated. It may also influence the aspect of a case of antral suppuration, by allowing the pus to pass into the nose at a point lower and farther back than the ostium maxillare, and thus favour its flow into the naso-pharynx rather than anteriorly.

The ostium accessorium, especially if large, may be a source of danger to the antrum by facilitating the entrance of morbid secretions from the nose. In one of the subjects examined, pus could be traced through an accessory opening into the antrum. On the other hand, abnormal antral discharges will escape more readily, and the spontaneous cure of pathological processes within the cavity be favoured.

VARIOUS OTHER ABNORMALITIES.

The following conditions, several possibly pathological, were also found in the course of my examinations:—

1. *Bony shell in antrum.*—Male, 65; left antrum. On inner side of floor an elevation as large as a bean was present. This was found to consist of cancellous bone, and, on removal, a small cavity was exposed containing scanty yellow fluid.

2. *Bony shell in antrum.*—Male; left antrum. A hemispherical elevation resembling a cyst with purulent contents was present on the floor. It was found, however, to be bony. On breaking through the thin shell, a sac was exposed containing a whitish substance and a little fluid. Beneath the sac the floor was rough, underlying which was the carious root of the third molar.

3. *Thinness of lining membrane of antrum.*—Male, 45; anterior wall thin. Cavities empty. The lining membrane on both sides was so thin as almost to feel absent but for the ease with which a probe glided over the bony surfaces.

4. *Perforation in anterior wall of antrum.*—Male, 27. When about to open left antrum, a hole large enough to admit the probe was encountered quarter of an inch above the alveolar border and opposite the first molar, of which only the three roots remained. On introducing the probe, it entered the antrum. The anterior wall of the cavity was very thin, and the lining membrane had a pale gelatinous look. On removing the outer wall of the alveolar border, a sac was found, having thick fluid contents, into which the three fangs projected.

There was no fluid in the antrum, and no apparent connection between the sac and antrum.

5. *Absence of ostia.*—Male, 65. In this subject's nose there was no trace of turbinates; the septum, excepting the membranous portion, had also been destroyed (syphilis). The antral openings could not be found, although they were carefully sought for.

6. *Antra abnormally small.*—Male, 55. On proceeding to open the antrum in the usual manner, and after boring through a considerable thickness of bone, the nose was entered. A passage was then drilled through the upper part of the channel already made, and the antrum reached. The cavity was as large as a bean, and situated just below the eye. The lining membrane was normal. Both antra were alike. The cheeks were deeply sunken.

7. *Antra abnormally small.*—Female, 19. On boring in the usual direction, the antrum was missed, but by continuing more upwards the cavity was opened. It was found that the alveolar recess was not fully formed. Lining membrane normal. Both antra alike.

BOTH ANTRA NORMAL.

Both antra were empty, and the lining membrane was thin, smooth, and glistening in 30 subjects. To this strikingly small number of normal antra should possibly be added several cases in which the lining membrane was healthy, but scanty cloudy fluid was present. I have suggested (see below) that the fluid in some of the latter may have been of *post-mortem* or extra-antral origin. These cases have, however, been grouped with those having serous contents, and will be referred to subsequently.

Dmochowski, in 152 subjects, found the antra healthy in 124, *i.e.*, 61·5 per cent; Gradenigo, in 103 subjects, found no pathological condition in 39 = 37 per cent.

In the above 30 subjects, the state of the nasal cavities was as follows:—Both normal, 13; one normal, left, 2; hypertrophic rhinitis on both sides, 5; hypertrophic rhinitis on one side, right 1, left 2; atrophic rhinitis (slight), 3; atrophic rhinitis on one side, right 1, left 1; spur, ridge, or irregularity of septum, right 7, left 3; polypus, left, 1.

The causes of death in these subjects were:—Cardiac disease, 5; malignant disease, 4; hernia or intestinal obstruction, 4; meningitis, 2; pneumonia, 2; tuberculosis, 2; and 1 from each of the following causes—diphtheria, pleurisy, puerperal pyæmia, peritonitis, apoplexy, epilepsy, diabetes mellitus, purpura hæmorrhagica, ectopic gestation, accident, and operation.

SUBJECTS HAVING ONE ANTRUM NORMAL.

Twenty-six subjects had one antrum normal. If this number be added to that of the antra normal on both sides (60 antra in 30 subjects), a total of 86 normal antra in 200 (43 per cent) is obtained.

This group of cases, by affording a comparison of the two sides, would seem to offer a good opportunity of studying the influence of antral disease on the nasal cavity, and *vice versâ*. Unfortunately, however, the affection of the antrum in but a few instances was of a mild nature, and such as would not readily produce changes in the nasal mucous membrane. Thus, the affected antrum in 6 instances merely contained serous fluid, and in 5 presented slight cystic degeneration of the lining membrane. In all of these cases, there was no difference between the nasal cavities on the two sides, if spurs and deviations of the septum be left out of account. In fact, there was only one case in which a pathological condition in the nose might have been regarded as the result of antral disease. The diseased antrum in this subject contained pus, and its lining membrane was thickened; the corresponding middle turbinate was polypoid, while that on the other side was normal.

The nasal condition in several instances would seem to have played a part in producing the antral disease, for in 4 of the 7 cases in which the lining membrane of the antrum was thickened or polypoid, marked changes, mostly hypertrophic, had taken place in the inferior or middle turbinate of both sides. On the other hand, the nasal fossæ were normal in the great majority of cases in which the affection of the antrum was insignificant.

The causes of death in the above 26 subjects were:—Cardiac disease, 6; malignant disease, 5; apoplexy, 3; phthisis pulmonalis, 2; pneumonia, 2; bronchitis, 1; fatty degeneration of liver, &c., 1; ovarian tumour, 1; accident, 3; and unknown, 2.

(*To be continued.*)

Obituary.

SURGEON-GENERAL J. JAMESON, M.D., C.B., K.H.S., LL.D.

THE news of the death, on the 13th ult., of Surgeon-General James Jameson is fraught with a peculiar interest to us on account of the close association which the deceased officer had with Glasgow.

Born in Kilbirnie in August, 1837, the second son of W. Jameson, of Ladeside, he was educated in the High School, and afterwards in the University, of Glasgow. He was appointed staff-assistant surgeon in the army in 1857, and proceeded to Canada. He joined the 47th Regiment of Foot and accompanied it to the West Indies, and he received special promotion for highly meritorious service rendered during an epidemic of yellow fever in Trinidad. In the Franco-German war of 1870-71, Jameson commanded a division of the English ambulance, and, by a special act of grace, was awarded the Emperor William I commemoration war medal. He also received the Canadian war medal and clasp for service during the Fenian raid in 1866. He passed through all the ranks of his department, ultimately becoming Director-General in 1896. He was made Companion of the Bath in 1897, and in the same year his *Alma Mater* conferred on him the degree of LL.D. A year later, he received the Honorary Fellowship of the Faculty of Physicians and Surgeons of Glasgow. He was also Honorary Surgeon to the King, and a Knight of Grace of the Order of St. John of Jerusalem.

The outbreak of the Boer war found Jameson at the head of the army medical department. Some idea of the work he had to do may be gathered from the following:—"The medical establishment before the war was designedly fixed for two army corps and two cavalry brigades, and it was practically exhausted in the early months of the war, and little remained for hospital duties at home." With the increasing size of the army in the field, more *personnel* and medical material had to be provided, and soon the impoverished staff in this country had to deal with over 50,000 invalids. How to attend to these with an establishment already expended was the question, and this is how Jameson coped with the difficulty. Sufficient candidates could not be got to compete for commissions in the R.A.M.C., and resort was had to the system of nomination by colleges and medical schools, with the result that "the establishment was restored to its normal strength, and temporarily increased by 100." Over 700 civil surgeons were enrolled for the front, and a large number in addition were engaged for the hospitals at home. The rank and file was recruited by calling out the reservists, by enlistment, and by recalling from the colonies all that could be spared. In this way 7,000 trained men were obtained for South Africa. In addition, 500 were obtained from the militia medical staff corps, 600 from the volunteers, and 1,900 from the St. John Ambulance Brigade. Who was responsible for the difficulties due to deficiency of men of the Royal Army Medical Corps? The answer is found in the words of the Royal Commission —"The deficiency was not the fault of the Director-General and the staff of officers associated with him. They had for a considerable time before the outbreak urged upon the military authorities the necessity for an increase of the corps, but for the most part without avail."

Jameson's tenure of office expired in 1901, and, to quote Sir William MacCormac, he left "the ranks of the army not only without the customary recognition given to every one of his predecessors, but also without one word of thanks or one line of acknowledgment."

The complimentary dinner given to him by the medical profession of Great Britain and Ireland on 24th July, 1901, testified to the esteem in which they held him, and he has surely had the satisfaction during his brief three years of retirement of feeling that he had been "*in arduis fidelis.*"

Two sons follow him in the medical profession; the elder of these is a captain in the Corps of which his father was so distinguished a member.

CURRENT TOPICS.

THE GLASGOW MEDICAL SCHOOL.

In view of the near approach of the winter session, which opens on 13th inst., the following particulars will be found of use to intending students:—

UNIVERSITY OF GLASGOW.

The University grants four degrees in medicine. Of these, the M.B. and Ch.B. must be taken together.

Before commencing his medical studies, the student must pass the preliminary examination. This comprises (1) English, (2) Latin, (3) Elementary Mathematics, (4) Greek, French, or German. In the case of a candidate whose native language is not English, certain modifications may be made in the preliminary examination.

The certificate of having passed the above examination must, along with satisfactory evidence of the applicant having attained the age of sixteen years, be transmitted to James Robertson, Esq., 54 George Square, Edinburgh, so that the intending student may be registered in the books of the General Medical Council. Certain examinations, amongst them a degree in Arts or in Science, from a recognised University, are accepted as exempting from the preliminary examination.

The degrees of M.B. and Ch.B. will not be conferred unless the candidate has been registered in the books of the General Medical Council for at least five years previously. Two of the five years of medical study must be spent at the University. There are four professional examinations. Of these, the first comprises Botany, Zoology, Chemistry and Physics. Candidates are admitted to all or any two of these subjects at any examination held after they have attended a full course in each of the subjects professed. Those who have passed the first professional examination may be admitted to the second (Anatomy, Physiology, and Materia Medica and Therapeutics) at the end of the third winter session. The third examination (Pathology, Medical Jurisprudence and Public Health) may be taken at the end of the fourth winter session. The final examination is open to those who have passed the third, and who have completed their fifth year of study. The examination comprises Medicine, Surgery, and Obstetrics and Gynæcology. Every candidate for the final examination must submit a declaration, in his own handwriting, that he has completed his twenty-first year, or that he will have completed it on or before the day of graduation, and that he will not be, on the day of graduation, under articles of apprenticeship to any surgeon or other master.

The first three examinations are held in the last week of September and of March; the final examination is held in June. Class fees vary; for the majority, the fee is £4, 4s.

Clinical courses are usually taken in the Western Infirmary. A list of the different clinics will be found below.

Classes for Women are held in Queen Margaret College and in the Royal Infirmary.

The higher degree of M.D. may be taken by anyone who holds the Bachelor's degrees in medicine and surgery, on his complying with certain conditions. These are: That he must be of the age of twenty-four years or upwards; that he produces a certificate of having been engaged subsequently to having received the degrees of M.B. and Ch.B. for at least one year in attendance in the medical wards of an hospital, or in scientific work bearing directly on his profession, such as is conducted in the Research Laboratories of the University, or in the military or naval medical services, or for at least two years in practice other than practice restricted to surgery. The candidate must pass an examination in clinical medicine, and must submit a thesis, for the approval of the Faculty of Medicine, on any branch of knowledge comprised in the second, third, or fourth professional examinations for M.B. and Ch.B., excepting subjects which are exclusively surgical. Similarly, the degree of Ch.M. may be obtained by examination in clinical surgery and the presentation of a thesis on a subject not exclusively medical.

Full particulars of courses, fees, dates of examinations, &c., will be found in the University *Calendar* (Messrs. Maclehose & Sons), or may be obtained from W. I. Addison, Esq., Assistant Clerk of Senate, the University.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

(1) *Triple Qualification* (L.R.C.P.E., L.R.C.S.E., & L.F.P.S.G.).—In conjunction with the Royal Colleges of Physicians and of Surgeons of Edinburgh, the Faculty of Physicians and Surgeons of Glasgow grants a license to practise. This triple qualification admits to the *Medical Register*, and those possessing it are eligible for the public services. The course of study and the examinations are similar to those for the University degrees, but the class fees are lower. Qualifying courses are held in Anderson's College Medical School and in St. Mungo's College,[1] and particulars may be obtained from the respective Deans. Regulations for the triple qualification may be had from Alex. Duncan, Esq., LL.D., Secretary to the

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[1] Many of these courses are recognised by the University as qualifying for graduation. For special regulations, see the respective *Calendars*.

Faculty of Physicians and Surgeons, 242 St. Vincent Street, Glasgow.

(2) *Fellowship.*—This fellowship is open to registered practitioners of not less than 24 years of age, and of not less than two years' standing. The candidate must pass an examination in medicine or surgery, and in any one of the following subjects which he may select:—Anatomy, Physiology, Pathology, Midwifery, Diseases of Women, Medical Jurisprudence, Ophthalmic Surgery, Aural, Laryngeal and Nasal Surgery; Dental Surgery, State Medicine, Psychological Medicine, Dermatology.

Fee, £50; to one who is already a licentiate of the Faculty, £25. If the candidate does not desire to be eligible to hold office, the fees are £30 and £15 respectively.

CLINICS.

Western Infirmary (adjoining the University), 416 beds.—Visit hour, 9 A.M. daily; Out-door Department, 2 P.M. Every student shall pay a fee of £10, 10s. for hospital attendance, and, in addition, £3, 3s. for each winter session, and £2, 2s. for each summer session of clinical instruction. Students who have completed their clinical course elsewhere shall be permitted to enter for a six months' course of the *hospital only* on payment of a fee of £2, 2s. The fees shall be paid to the Superintendent, Dr. D. J. Mackintosh, M.V.O.

Royal Infirmary (St. Mungo's College adjoins), 618 beds.—Visit hours, as at Western Infirmary. Fees, including hospital practice and clinical lectures, for six months, £6, 6s.; three months, £3, 3s. The total fee is £21. Superintendent, Dr. J. Maxtone Thom.

Victoria Infirmary (Langside), 180 beds.—For particulars as to clinical courses, apply to the Superintendent, Dr. D. Otto Macgregor.

Royal Hospital for Sick Children (Garnethill), 74 beds.—Out-door Department, 11·30 A.M. Fee, £1, 1s., for twelve months (In-door and Out-door). For information, apply to Resident Medical Officer.

Eye Infirmary (174 Berkeley Street, and 80 Charlotte Street).—Hour of visit, 1 P.M. daily. Fee for six months, £1. 1s.; for twelve months, £2, 2s.

Ophthalmic Institution (126 West Regent Street).—Hour of visit, 2 P.M. Fee for a qualifying course, £1, 1s.

Insanity.—During the summer session, a course of lectures is given in the University, and clinical instruction in the Royal Asylum, Gartnavel. Fee for the combined course, £2, 2s.

At Gartloch Asylum, Gartcosh, senior medical students may obtain appointments as resident clinical clerks. The appointments are for six months, and classes can be attended in Glasgow in the earlier part of the day. Applications should be sent to the Medical Superintendent, Dr. W. A. Parker.

Fevers.—Clinical instruction is given in Belvidere and in Ruchill Hospital. Fee, for a course extending over ten weeks (once a week), £1, 1s.

Maternity Hospital.—Clinical instruction in midwifery is given at the hospital, and there are exceptional facilities for practical work.

There are also hospitals for diseases of the skin and of the ear, in which clinical instruction is given.

NEW PREPARATIONS, &c.

We have received the following preparations from Burroughs Wellcome & Co., London:—

Tabloid Lithium Citrate and Urotropine (Effervescent).—This is a convenient form in which to prescribe the above drugs in combination. Each tabloid contains lithium citrate, gr. 5 (0·324 grm.); urotropine, gr. 3 (0·194 grm.); effervescent basis, q. s. The effervescent draught will obviate the unpleasantness associated by many with the taking of any drugs.

Tabloid Glycerophosphates Compound.—This preparation contains the combined glycerophosphates of calcium, sodium, potassium, magnesium and iron, with pepsin, diastase, ignatia amara, and kola. Each tabloid is equivalent to half a fluid drachm of syrup of glycerophosphates.

Tabloid Ferric Chloride.—Each tabloid is equivalent to 10 minims of tincture of ferric chloride, *B.P.* It contains a small quantity of ammonium chloride as a vehicle.

Soloid Ferric Chloride.—One soloid dissolved in sufficient water to produce 40 minims, forms a solution equivalent to solution of ferric chloride, *B.P.*

VALENTINE'S MEAT-JUICE (Richmond, Va., U.S.A.: Valentine's

Meat-Juice Company).—The preparation is so well known as to render any detailed account of it unnecessary. Amid many rivals, it still holds its place in the estimation of the profession.

"MILO" FOOD (London: Henri Nestlé).—This is a modification of Nestlé's Milk Food. The basis of the food remains the same, viz., milk, but there is a great reduction in the proportion of starch. Choice milk from pasture-fed cows is concentrated *in vacuo.* To this is added a little sugar and the soluble elements of wheat flour, in such proportions as to correspond to the amount of fat, sugar, proteids, and salts of mother's milk. It is claimed that the milk is, by the above addition, prevented from curdling in large lumps, and is thus as digestible as mother's milk.

The food is mixed with water to make a paste; this is added to a quantity of boiling water, varying according to the age of the infant, and the mixture is boiled for two or three minutes.

TABLENES (Kassler & Wolff, 101 Fleet Street, London).—The present preparation contains pepsin, Kurochi diastase, aloin, and extract of cascara sagrada. Kurochi diastase is said to convert 250 or more times its weight of dry starch into sugar within half an hour. The above combination is calculated to be of value in those cases of dyspepsia where it is desirable to give artificial aid to the digestion of albuminous and starchy foods, and at the same time to stimulate the intestine. We have received samples of the four active ingredients of the tablenes, as well as of the latter themselves.

THE following preparations have been received from Wm. R. Warner & Co., Philadelphia (British Agents: F. Newbery & Sons, 27 Charterhouse Square, London):—

Tono Sumbul.—A cordial which contains sumbul, phosphate of iron, cinchonine, acid phosphate, aromatics and sherry wine.

Bromo Soda.—An effervescing preparation, a teaspoonful of which contains caffeine 1 gr. and sodium bromide 30 grs.

Ingluvin.—In powder and in tablets.

Tono-nervine Tablets.—Containing extract of damiana, phosphorus, carbonate of iron, asafœtida, extract of sumbul, and extract of nux vomica.

Effervescent Lithia Lentiforms.—Each lentiform containing 5 grains of citrate of lithia.

Antiperiodic Pill.—Containing cinchonine sulphate, gelsemin, podophyllin, iron sulphate, and strychnine sulphate.

Cathartic and Liver Pill.—Containing podophyllin, scammony, extract of colocynth, soap, aloes, extract of hyoscyamus, and gingerine.

Effervescent Vichy Lentiforms.—For making Vichy water.

Effervescent Kissingen Lentiforms.—For making Kissingen water.

Antiseptic Pastilles.—Containing bicarbonate, biborate, benzoate and salicylate of sodium, eucalyptol, thymol, menthol, oil of gaultheria, glycerin, alcohol and water, for use in solution as a nasal spray or mouth wash.

Pink Pills.—Containing Blaud's pill, extract of hyoscyamus, aloin, and arsenic.

Cathartic Cascara Pill.—Containing cascarin, aloin, extract of belladonna, strychnine, podophyllin, and gingerine.

MEETINGS OF SOCIETIES.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1903-1904.

MEETING VIII.—27TH APRIL, 1904.

The President, DR. J. NIGEL STARK, *in the Chair.*

I.—SPECIMENS.

A. BY DR. J. M. MUNRO KERR.

Two myomata, also Fallopian tubes from another case, which were declared to be tuberculous, but the correctness of this view was doubted.

B. BY DR. P. M'BRYDE.

A long feather which was discharged from a labial abscess in a girl of 15.

C. Mr. R. H. Parry.

Dermoid of the left ovary which had constricted the sigmoid flexure. The right ovary had a number of small cysts. In the same patient there was also a large cyst, attached to the omentum and without any connection with the pelvic organs, which proved, however, on examination to be a multilocular ovarian cystoma. Mr. Parry suggested that it had been transplanted from the right ovary, but Dr. J. K. Kelly was of opinion that it might have become separated from the left ovary during the torsion which caused constriction of the sigmoid flexure.

D. By Dr. S. J. M. Cameron.

A case of spina bifida (variety, meningo-myelocele) in which operation was performed a few hours after birth of the child. Operation was necessitated through injury to the sac during parturition, a resulting septic meningitis or escape of cerebro-spinal fluid being feared. The sac was dissected off, the nerve filaments being freed and returned into the neural canal. The erector spinæ muscles were united over the incomplete laminæ and the skin edges brought together, tension on the skin being relieved by lateral incisions. Slight paralysis existed for a few days after operation, but a month later, when the child was shown before the Society, the muscles were quite powerful. There was a certain amount of hydrocephalus as well, the parietal bones having failed to meet in the middle line. Mr. Parry considered this would probably diminish the child's chance of life, but Drs. Jardine and Kerr held that it had a fair chance of complete recovery. The general opinion of the Society was that, in view of the traumatic condition of the parts, the treatment was correct.

II.—CASE OF RECURRENT ECLAMPSIA.

By Dr. Robert Jardine.

As a rule, when a woman has once safely passed through an attack of puerperal eclampsia, one is safe in assuring her that if she should again become pregnant there is little risk of her having to undergo the same terrible ordeal. To this rule there are, however, rare exceptions. Recurrence is so rare that many of the writers of obstetric works make no mention of it. Webster, however, deals with it, and mentions that in eighty-one cases Leopold found it recurred more than once in

2·5 per cent, and in one case in three successive pregnancies. Olshausen gives the recurrence in 1 per cent of cases. Dr. Munro Kerr, in his collection of 80 cases taken from the records of the Maternity Hospital, published in vol. iii of the *Glasgow Hospital Reports,* found there were two cases—one fatal, a v-para, who had had convulsions at her three previous confinements, and the other, a v-para also, had had convulsions in all her previous confinements. In both the urine became solid on boiling, so there can be little doubt they were genuine eclampsias.

Quite recently a case was admitted to the Maternity Hospital after having had a couple of fits. One of our nurses saw the patient in the fits, and described them as ordinary eclamptic fits. The patient was quite conscious when admitted, and told me that at her previous confinement, three years before, she had had a similar attack. She stated that she had given birth to twins at that time. On admission, her urine was absolutely normal. Delivery was effected after dilatation with Bossi's dilator, and a saline infusion was given. The patient had no more fits. I wrote to Dr. Reid, of Rothesay, under whose care the patient said she had been in her previous attacks, but he replied that he had no record of ever having seen the woman, but he might possibly have been called in casually; however, it is hardly likely he would have forgotten a case of eclampsia with twins.

I have never seen a case of true eclampsia without albumen, and I am very sceptical that this was a case.

In another recent case, with great dropsy and copious albumen in the urine, the patient stated that she had had fits during her first three pregnancies, but not, apparently, during her labours. Her present pregnancy was her sixth. I do not think these were eclamptic fits at all, but she was on the verge of having a true eclamptic seizure when admitted, as her urine was almost solid on boiling, and she was suffering from severe headache and vomiting.

In *Clinical Obstetrics* I have recorded a case of true recurrent eclampsia which I saw in consultation with Dr. James Adam, of Hamilton, and the following is another one which I recently treated in the hospital. As she was in the hospital under Dr. Black's care during her first seizure, I am able to give full notes of both attacks. These are the only cases I have seen.

First attack.—Mrs. A., iv-para, æt. 30, was admitted to the Maternity Hospital on 23rd April, 1900. She was supposed to be eight months pregnant. Her three previous pregnancies had ended in miscarriages at the fifth and sixth months. In the course of the present pregnancy, up till 23rd April nothing had been noticed amiss, nor during her previous pregnancies had there been any untoward symptoms of note. The day before admission she had walked three miles, and felt quite well. At 3 A.M. on 23rd April her husband awoke and found his wife lying unconscious on the floor. She regained consciousness, and about 6 A.M. there was another fit, followed by a third a little later. At 9 A.M. the patient seemed to faint without any convulsive seizure, and since that time was not conscious before admission at 11 A.M. After admission there was another slight fit at noon, and the patient continued comatose. There was œdema of the feet and hands, but not very marked. The urine was loaded with albumen.

Treatment.—Salts were given, and 2 pints of saline solution were infused (1 drm. each of sodium chloride and acetate to the pint). The bowels moved four times, and 34 oz. of urine were got by catheter.

Next day the coma was beginning to pass off, and on the 26th she was conscious, but her vision was dim. Early on the 27th labour came on, and at 9·15 A.M. a male child was born dead by natural efforts. It weighed 4¾ lb.

The albumen had diminished about half before delivery, and the day after there was very little more than a trace. The patient made a good recovery, but there was still a trace of albumen in the urine when she was dismissed.

Second attack.—On 3rd December, 1903, the patient was again admitted to the hospital in a semi-comatose state, and with a history of convulsions for twelve hours.

On 31st November swelling of the legs had first been noticed. This had not been marked, and there had been no swelling elsewhere. At 11 P.M. on 2nd December the membranes had ruptured, and after this she had begun to feel pains. At 4·35 A.M. on 3rd December she had the first convulsion, followed by others at 5·45 A.M. and 12·45 P.M. In the intervals she had been conscious, and had complained of severe frontal headache, and had vomited frequently. At 1·40 P.M. a fourth fit had occurred, after which she had not regained consciousness. She was admitted at 2·30 P.M.

Condition on admission.—The patient was of good colour, and well nourished. There was slight swelling of the right cheek, but no œdema of the eyelids. The pupils were dilated, equal, and fixed. She was semi-comatose, and resisted any attempt at examination. Her pulse was 128, regular, and of increased tension. The respiration was noisy, but regular. There was slight swelling of the feet and legs.

Abdomen.—The fundus uteri was about 3 inches below the ensiform cartilage. The fœtal heart-sounds were audible. The os was dilated to admit one finger, and the head presented. The urine contained a very large quantity of albumen, and the microscope revealed numerous granular and hyaline casts and degenerated blood-cells. The heart-sounds were pure, but there was distinct accentuation of the second aortic sound.

At 3 P.M. the patient had a fit, lasting about one minute. She became very pale, and her pulse-rate fell to 60. Chloroform was given, and 2 pints of saline fluid (1 drm. each of sodium coloride and sodium acetate to the pint) were injected under the right mamma. At 3·30 the os, which then admitted two fingers, was dilated with a Bossi's dilator, and a live child was delivered by forceps. An ounce and a half of mag. sulph. were given by the stomach tube, and the patient put into a hot pack.

The patient was unconscious for some hours, but she took no more fits. In twenty-four hours she was able to answer questions, but was somewhat confused. The bowels moved freely, and she passed large quantities of urine into the bed.

The recovery was uninterrupted. The tube-casts disappeared from the urine, but there was still a trace of albumen present when she was dismissed a fortnight later.

I think that this case probably suffers from chronic kidney disease, and the probability is that, if she should again become pregnant and go to full time, she will have another attack unless she is carefully looked after. The three miscarriages she had may have been caused by her kidney condition. Recurrent attacks seem only to occur in cases with damaged kidneys.

III.—CASE OF HYDROCEPHALUS WITH SEVERE POST-PARTUM HÆMORRHAGE.

By Dr. Robert Jardine.

Mrs. G., ii-para, æt. 32, was admitted to the Glasgow Maternity Hospital on 12th October, 1902. She stated that she was at full term, and that the waters began to come away on 2nd October, but the pains had not been severe until 11th October, when they began to be very strong. A doctor was called in, and he tried to deliver her with forceps on the evening of the 11th, but failed. He made a second attempt on the following morning, but again failed. In the afternoon he sent her into hospital, with a note saying that it was a case of hydrocephalus, with the head and foot presenting.

Condition on admission.—The patient was in a very exhausted state, with a temperature of 100·2° F. and a pulse of 120. Palpation revealed that the uterus was firmly moulded round the child. There was no special thinning-out of the lower uterine segment, so the retraction ring could not be felt. The uterus was quite hard, and there was no relaxation at intervals; it was in a condition of continuous tonic contraction. The round ligaments felt like small rigid bars. The large head could be easily made out and the bones felt to crackle beneath the fingers. By the vagina, a large boggy mass was felt to extend into the pelvic cavity, and behind it a band.

I at once perforated the head, and delivered by means of a cranioclast. The uterus would not retract, but lay in the abdomen like a collapsed football. Profuse bleeding came on. I at once cleared the placenta and membranes out of the uterus, and used bimanual compression to check the bleeding. The patient's abdomen was very flaccid, so that I could pass my hand behind the uterus, grasp it, and double it down. While doing this, I was able to compress the aorta with the back of my wrist; this gave me complete control over the bleeding for the time being. An intra-uterine douche (120° F.) was given, and ended up with 30 grains to the pint of suprarenal gland. The uterus was still unretracted, so I plugged it firmly with seven long strips of iodoform gauze, and then firmly filled the vagina. The patient's pulse was now quite imperceptible at the wrist. Immediately after delivery an assistant had commenced giving her a saline infusion, and by the time I was finished she had received 4 pints under her breasts. She was also freely stimulated with ether and strychnine, and given ergot hypodermically.

By next day she had improved considerably, but was still very weak. I left the uterine plug in for forty-eight hours. The uterus was so firmly retracted round it that we had to chloroform the patient to remove it. There was no bleeding. The patient made a good recovery.

In dealing with a case of post-partum hæmorrhage, this method of grasping the uterus firmly, doubling it down, and and compressing it between the two hands, one of which is closed in the posterior fornix, is most effectual in checking the hæmorrhage for the time being. The cavity should, of course, be first cleared of placenta and clots.

The compression is equally effectual whether the bleeding is from the placental site, high up in the uterus, or low down in a case of placenta prævia, or from a laceration in the cervix. The suprarenal gland douche of 30 grains to the pint I have now used very frequently, and am quite convinced that it does good. I use it in nearly every case of placenta prævia. It is boiled first for a few minutes to sterilise it. I generally soak the iodoform plugs in it. In this case this was not done, but there was a good deal of the solution in the uterus when I began plugging, so the gauze was really soaked in it. The saline infusion we use as a routine practice in all cases of severe hæmorrhage and shock, with most beneficial results. I have now given hundreds of infusions, and have only once seen an abscess form afterwards. That was in an eclamptic patient, and the infusion was given under her right breast at her home before she was admitted. She was in a very dirty condition, and the water used was not properly sterilised, neither was the jug. A large abscess formed under the breast, but it gave her very little pain, and did not cause much feverishness, although the pus from it stank most abominably. If strict aseptic precautions are taken there is no risk.

The condition of the uterus prior to delivery was an interesting one. It was as hard as it could be, with the round ligaments standing out like rods. It was in a condition of tonic contraction, and did not relax even when the patient was chloroformed. It is a wonder rupture had not occurred. I was quite sure it would not retract after delivery, so I was prepared to deal promptly by plugging, and in this way was able to save the patient's life. A very few minutes more delay would have been disastrous.

IV.—TWO CASES OF PRIMARY CARCINOMA OF THE OVARY, WITH MICROSCOPIC SECTIONS DEMONSTRATING IT.

By Dr. J. K. Kelly.

Case I.—Mrs. C., aged 45, was admitted to the Glasgow Royal Infirmary on 16th February, 1903. She had been married for eight years, but, except for an abortion at the third month about a year after her marriage, she had had no pregnancy. Her menstruation began at the age of 17, recurred every twenty-eight days, and lasted from five to seven days. It was usually preceded by a slight sickness. The menopause took place about two and a half years ago, just after she had a small tumour removed from her right breast. After the removal of the tumour she never menstruated, but continued in good health except for flushings. Two months before admission she noticed a swelling in the lower abdomen. This has steadily and rapidly increased, till now the abdomen is so tense that she has to remain in a sitting position at night, and is breathless on the slightest exertion. During this time she has been getting decidedly thinner and weaker, and for ten days has been unable to do any work whatever. For fourteen days she has had some pain in micturition, and for about a week she has had difficulty in emptying the bladder. She has been constipated, but has had no vomiting, though greatly troubled with flatulence. At the time of admission she had to sit constantly upright, and had considerable distress in breathing, and the lower portions of the trunk were œdematous. There was absolute dulness and absence of respiratory murmur over the right lung posteriorly up to the level of the angle of the scapula, while over the same area of the left lung there were coarse crepitant râles. The abdomen was greatly distended, the skin glazed, and over the lower part the wall was œdematous. The superficial veins were well marked. On palpation the abdomen felt extremely tense, but no tumour nodules could be detected. In the dorsal position the whole left side was dull to percussion, the dulness passing across to the right side about 2 inches above the pubis, the right side being clear. When the position was changed, the left side became clear and the right dull. The liver percussion was of normal size. Vaginal examination revealed a feeling of tension in the vaginal vault, with a nulliparous uterus somewhat depressed. No tumour mass could be felt, but there was some irregularity and greater firmness posteriorly.

The outstanding feature in this case, therefore, was a rapidly accumulating peritoneal effusion associated with a cessation of the menses, and with the appearances at first of a tumour in the lower abdomen, which could not now be traced owing to the abdominal distension, but which was suggested by the feeling of increased firmness and irregularity in Douglas' pouch. We considered it accordingly a case of ovarian cyst, and, if so, then evidently of a very malignant type.

On the second day after admission, abdominal section was done. A large amount of straw-coloured fluid escaped from the peritoneal cavity. Both ovaries were found to be cystic, that on the left side forming a considerable mass blocking up Douglas' pouch. The tumour on the right side was about the size of a small apple, and was removed without the tube.

She made a good recovery, and left the ward nineteen days after operation.

Four and a half months after, she returned to the ward with the abdomen again enormously distended, and over 8 pints of fluid were removed by tapping.

Again, in three and a half months, she returned with distended tense abdomen, clear to percussion all over except in in the flanks. At this time firm rounded nodules could be made out in Douglas' pouch, and extending as high as we could reach *per rectum*. About 28 oz. of fluid were removed by tapping, but, as the patient was evidently near the end, we did not feel justified in attempting anything further, and she died a few days after going home—*i.e.*, about nine months after her first admission to hospital, and about eleven months after the first appearance of abdominal swelling.

Dr. M'Ilroy's report on the specimen is as follows:—

"The *left ovary* is enlarged to the size of a large orange, and is divided into two large loculi, which have a common capsule. The walls show hæmorrhagic infiltration. There is some thickening of the walls in various parts. The tube is normal.

"The *right ovary* is about the size of an egg, and forms a thin-walled single cyst. The wall is thickened and hæmorrhagic in portions. The tube has not been removed.

"On microscopical examination, the tissue from the harder portions of the cyst walls show a typical adenocystoma, undergoing in some places carcinomatous degeneration. The glandular spaces are irregular, and the lining membrane is broken up, the spaces being filled with large irregular proliferating cells."

CASE II.—H. D., æt. 30, unmarried, admitted to the Glasgow Royal Infirmary on 19th February, 1903, complaining of pain and swelling in the abdomen of about two months' duration. She began menstruating at 17, and was regular every twenty-eight days till about twelve months ago, when the discharge became more scanty, and gradually diminished till it ceased entirely eight months ago. In the beginning of December she first observed a swelling in the abdomen, and this has increased steadily and rapidly. Since the new year, also, she has suffered from pain in the abdomen, which is occasionally very severe, and causes vomiting. The patient was very dull intellectually, and information was got with difficulty. She was pallid and unhealthy-looking, with bad teeth; but there was no œdema, and pulmonary sounds were normal. There was a soft V.S. bruit at apex, probably hæmic. The abdomen was distended, the distension being more marked on the left side. The abdomen was rather irregular in outline, the irregularity varying somewhat under inspection. There was marked darkening of the nipples and umbilicus, and a distinct linea nigra stretched from umbilicus to pubis. On palpation, the whole left side of abdomen up nearly to the ribs was found occupied by a firm tumour, somewhat resembling a tensely distended uterus, and presenting ill-defined irregularities, but neither fœtal parts, fœtal movements, nor fœtal heart sounds. *Per vaginam*, the portio vaginalis was found low in pelvis, soft, but not enlarged, os small, Douglas' pouch occupied but not bulged down by an irregular mass passing down into and occupying the whole right side of the pelvis, the left side being left free. Slight movement can be communicated to the mass by pressure on the abdomen, the uterus also moving at the same time. In the pelvis the mass feels more distinctly cystic than in the abdomen, but even here is exceedingly hard. Sound passes 2½ inches in ordinary direction, knob passing slightly to the left of the middle line.

We formed the opinion that we had to deal with an ovarian cyst which had probably undergone some degree of torsion, and on 26th February abdominal section was done. The tumour was found to consist of one very large mass springing from the left ovary and occupying the abdomen, and a smaller mass filling the hollow of the sacrum and the right side of the pelvis, and representing the right ovary. The larger mass was adherent to the omentum in two parts, but there was no great difficulty in separating the adhesions. Both tumours were practically solid, and were removed whole. The patient had an excellent recovery, and left the hospital on 14th March, seventeen days after the operation. I have no note of her after-history except that she died in June, of recurrence in the abdomen, six months after first appearance of the tumour.

Dr. M'Ilroy's report is as follows:—

"The specimen shows both ovaries greatly enlarged, the larger being about three times the size of the smaller. The large tumour is 8¾ in. long, 5½ in. broad, and weighs 2¾ lb.; the smaller is 4¾ in. long, 2¾ in. broad, and weighs ¾ lb.

"The larger tumour is like an enormously hypertrophied ovary, being somewhat irregular in outline, and composed of firm tissue, cystic in places. The surface is glistening and injected. The centre of the tumour is dense and fibrous in structure, but at each end there are numerous cysts. The tube is apparently normal.

"The smaller tumour is conical in shape, one side being concave where it lay in contact with the other tumour. It is composed mainly of fibrous tissue, but is cystic in one portion. The tube is normal.

"After hardening in formalin, the tumours were incised longitudinally. The larger shows the presence of several large cysts in its interior; these cysts are divided up into loculi, which form smaller cysts. The fluid contents are clear, and the lining membrane is myxomatous in character. The centre of the tumour is composed of dense fibrous tissue, with some small cysts. The smaller tumour contains one large cyst, with several loculi in its interior. The remaining portion is dense fibrous tissue. Both tumours are free from adhesions. On microscopical examination, sections of both tumours show the presence of well-marked alveolar carcinoma. The ovarian tissue is everywhere invaded by masses and groups of carcinomatous cells; these cells are undergoing rapid proliferation. The ovarian stroma seems normal when not invaded, and has numerous Graafian follicles in its substance."

Under the microscopes sections of these tumours are to be seen, and, for the sake of comparison, Dr. M'Ilroy is showing sections of normal ovary and of the ordinary non-malignant adenocystoma of the ovary.

There is no doubt whatever of the malignant character of the cases I have reported to-night, but it is difficult to define the exact degree and the limits of malignancy in ovarian tumours. Clinically, we know that an ordinary ovarian cystoma, if left alone, will prove malignant in the sense of destroying the patient's life. It will grow at the expense of the patient, and will ultimately kill her. But these tumours are of a different nature. Their malignancy is not of this simple kind, that they simply consumed the sustenance that should have gone to the nourishment of their host. They were comparatively small tumours, and they killed their hosts, not by starvation, but by a more rapid and virulent process. Is this process associated with, or due to, the histological characters of these tumours? Would it be possible, apart from the clinical history, to say that either of these cases was malignant? Ovarian cystoma has such a proliferative activity that it is difficult to say what forms it cannot take without becoming cancerous, and in the first of our cases I doubt whether we could have declared it cancerous without the support of the clinical history. With that history, it is easy to interpret the stratified epithelium we met with here and there as indicating the passage from adenoma to cancer.

In the second case, on the other hand, the diseased structure is so foreign to the ovary, and so unlike the ordinary cystoma, that the observer is at once led to regard it as of a malignant character. Dr. M'Ilroy considers it a cancer, but to my mind it resembles a sarcoma or endothelioma even more than a carcinoma.

REVIEWS.

The Development and Anatomy of the Prostate Gland, together with an Account of its Injuries and Diseases and their Surgical Treatment. By W. G. RICHARDSON, M.B., F.R.C.S. London: J. & A. Churchill. 1904.

TO-DAY, indeed for some time back, considerable attention has been bestowed on the prostate gland. This is the necessary result of the operative procedures which have been carried out in cases of prostatic enlargement. Such procedures aim at removal of the obstruction to the outflow of the urine—in other words, prostatectomy.

Some few years ago, the battle raged between the advocates of the suprapubic and perineal routes. This struggle gave place to the burning question of the possibility of complete removal of the offending gland and the fate of the prostatic urethra. The echoes of these controversies are still heard, but at the present time investigators have set to work on the anatomy, normal and pathological, of the parts, and readers of periodical medical literature and of the *Transactions* of the medical societies cannot fail to note how frequently the terms "sheath" and "capsule" crop up. Clinically, the work of Mr. Freyer must claim attention, while anatomical investigations have been carried out and prominently set forth by Mr. Cuthbert Wallace. These are by no means the only workers at the subject; but the published results of the former, and the lucid anatomical descriptions of the latter, must appeal, and rightly, to a large number of readers.

In view of the above state of matters, the volume now before us will be received and read with interest. The author's method of approaching the subject is admirable. The "essay," as he calls it, is based on 70 specimens. These are arranged in five divisions, according as they illustrate the anatomy, comparative anatomy, and pathology of the prostate gland; microscopical specimens form the fourth division, and the fifth comprises calculi. The above specimens are now in the museum of the Durham College of Medicine, and from them there have been prepared the figures, over forty in number, which illustrate the text. The subject-matter is arranged under different headings. In order, these are—anatomy, comparative anatomy, and development. Chronic enlargement follows, and, as is natural, this subject occupies a large portion of the book. Abscess, tuberculosis, and malignant affections are next touched upon, and a tabulated statement of the author's cases of prostatectomy closes the volume.

The anatomy of the prostate and its immediate surroundings is fully gone into. Attention is drawn to the position of the "middle lobe," and the statement is made (p. 14) that this part of the gland is "more commonly the seat of pathological change than the rest of the prostate." The author's views as to the pelvic fasciæ are unconventional:—"The recto-vesical fascia is nothing more than the sheath on the inner aspect of the levator ani" (p. 17); it does not form the ascending and descending layers on the pelvic viscera; "these layers are the proper fascial coverings of the viscera, which have connections, firm in one part and loose in another, where they come in contact with the recto-vesical fascia."

The sheath of the prostate is described as lying internal to the recto-vesical fascia, and continuous above with vesical fascia and below with the superior layer of the triangular ligament; near the neck of the bladder, the prostatic veins are embedded in this sheath. With regard to the rectal fascia, the attachment of its lower part to the recto-vesical fascia on either side is mentioned as "marking the position of the septa which, in the early embryo, divided the *ento*-dermal cloaca" into genito-urinary and rectal portions (p. 25). It is not till we finish this section of the work that we understand the "three" investments concerned in the origin of the capsule and sheath of the prostate (stroma, vesical fascia, and recto-vesical fascia); even then, on looking back, we find the sense of the passage obscure (p. 7).

A short sketch dealing with the comparative anatomy of the accessory genital glands comes next. In it the author suggests as a reason for the presence of three kinds of accessory glands the mode of development of the genito-urinary organs. In this way, we have the seminal vesicles in relation with the Wolffian ducts, the prostate with the anterior part of the entodermal cloaca, and Cowper's glands with the ectodermal cloaca. The separation of the utriculus from the prostates of the lower animals does away with the supposed homology between prostatic diseases occurring in elderly subjects and uterine troubles of about the same period.

The author's view as to the development of the parts is not likely to be universally accepted, at least, on the strength of his argument. We do not here refer so much to his account of the formation of the bladder from the hindgut (entodermal cloaca) as to his pleading for the epiblastic origin of the epithelial lining of the genito-urinary passages. From the closing sentence of paragraph 6 (p. 44), he evidently considers the presence of stratified epithelium conclusive evidence of such an origin. We should be glad to know his views as to the stratified epithelium of the œsophagus and the non-stratified lining of the central canal of the spinal cord. We do not feel that this section is as good as the anatomical one.

From these preliminary divisions we now pass to that dealing with the subject of chronic enlargement of the prostate. Briefly, the author's position is this:—Age is the only factor common to all cases, and glandular overgrowth is the first stage. This change is "a normal process, and can only be accounted pathological when it offers some mechanical obstruction to micturition." The next change is an increase in the fibrous and muscular tissues. In some prostates the enlargement is uniform, in others localised, so that we have the appearance of tumour-formation. The commonest form of enlargement is that of the lateral lobes; but sometimes these are not markedly enlarged, while the middle lobe is a conspicuous tumour which projects into the bladder. Symptoms, complications, and treatment are dealt with in subsequent paragraphs, and there we note the author's preference for the suprapubic operation.

The illustrations being numerous and printed on plate-paper, it has been necessary to insert them so as to interleave the volume. This is not convenient for purposes of reference, and interrupts the reader. In some of the figures, also, there is some difficulty in discerning the points referred to in the text, and the employment of descriptive legends would have been of great help.

The work of which this volume is the outcome must have been laborious, but the author should feel rewarded in the production of such a monograph. We are not surprised that it gained the Heath Scholarship Prize, and we would recommend the book to the notice of all—surgeon and general practitioner alike—who take an interest in the modern developments in the surgery of prostatic enlargement.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Fasciculus XVIII: Eruptions, &c., caused by Arsenic, Plates A to G; Urticaria Pigmentosa, Plates CXVIII to CXXI (coloured), Plates E to H (without colour); Illustrations of the Phenomena of Leprosy, Plates CXXII to CXXV (coloured), Plates I to Z (without colour). London: The New Sydenham Society. 1903.

In the last fasciculus, plates were given to illustrate the pigmentation, keratosis, and cancer which may follow the use of arsenic. Allusion is now made to arsenical zoster, and it is suggested that chimney-sweeper's cancer is due to arsenic, which is known to exist in considerable quantity in the soot of English coal. Summaries are given of a series of cases of arsenical cancer. The plates in this part of the work are reproduced from photographs taken during the epidemic of poisoning from arsenicated beer in Manchester in 1901. The lesions illustrated include pigmentation, œdema, erythema, keratosis, bullous eruptions, and paralysis of the diaphragm and limbs. It need scarcely be said that the introduction by Mr. Hutchinson is of a highly interesting character.

Urticaria pigmentosa, which is illustrated in the second portion of the fasciculus, is a rare disease, which was first described by Mr. Edward Nettleship in 1869. In its characteristic form, this affection, as described by Mr. Hutchinson in his introductory remarks, is an eruption which begins with a crop of urticarious wheals, persists for many months or years, and tends to become yellow or brown in colour. Though some of the papules persist for a long time, the general health remains good. Those who make themselves familiar with the coloured plates here given should have little difficulty with the diagnosis when they meet with a case.

The remainder of the fasciculus is devoted to leprosy, and reference is made to several works in which good portraits of the disease may be studied, including those of Danielssen and

Boeck, Hillis, Léloir, Turck, and Grünfeld. The pictures and descriptive text illustrate in a forcible manner the horrible ravages made by the disease on the human frame. The last two figures, which are taken from Grünfeld's atlas of cases collected in the regions about the mouths of the River Don, are portraits of a young woman three years before and about the same period after the onset of symptoms of leprosy, and constitute a melancholy example of the disfigurement brought about by the disease.

Saunders' Year-Book of Medicine and Surgery. Under the general Editorial charge of GEORGE M. GOULD, M.D. Medicine. London: W. B. Saunders & Co. 1904.

IN the effort to give a summary of the past year's progress in medicine, Dr. Gould has been assisted by sixteen editors of departments, and in a considerable proportion of cases the names of these editors are a sufficient guarantee of the authority with which they speak. It may be mentioned that the different departments reviewed in this volume are general medicine, pediatrics, pathology and bacteriology, nervous and mental diseases, cutaneous diseases and syphilis, materia medica, experimental therapeutics and pharmacology, physiology, legal medicine, public hygiene and preventive medicine, and physiologic chemistry. The short introduction now placed at the head of each chapter enables the reader to ascertain very quickly the principal directions in which advances have been made. The whole work strikes us as well planned and admirably executed. It is calculated to be of great value to medical practitioners, and not least to those who teach and to those who write upon medical subjects. The volume extends to more than 670 pages, and is provided with illustrations and an elaborate index.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. HARRISON MARTINDALE, Ph.D., F.C.S., and W. WYNN WESTCOTT, M.B. Lond., D.P.H. Eleventh Edition. London: H. K. Lewis. 1904.

IN a work of this kind changes must be expected with every new edition, and editions must appear at short intervals if the book is to retain its usefulness to physicians and chemists. The present edition contains 112 more pages than its predecessor, though it is less than the latter in size and weight. Among the new features of the book may be mentioned the various aspects of medical radiology, such as radium, *x*-rays, high-frequency currents, the Finsen lamp, and radiant heat.

Besides mere drugs, the *Extra Pharmacopœia* deals with such subjects as surgical dressings and apparatus, antidotes to poisons, mineral waters, urinary and blood tests, water analysis, and antitoxins and organotherapy. The index extends to nearly 140 pages. The *Extra Pharmacopœia* has been so extensively and honourably known for many years that it scarcely requires more than mention here. It ought to be close to every practitioner's writing desk.

Patent Foods and Patent Medicines. By ROBERT HUTCHISON, M.D., F.R.C.P. London: John Bale, Sons & Danielsson, Limited. 1904.

THE first of these two lectures was delivered to the South-west London Medical Society, and the second to the students of the London Hospital. The lectures were published in the *Lancet*, and are now reproduced with some corrections and additions. They are valuable as giving the composition of numerous proprietary foods and medicines, and also as showing how poor and expensive are the ordinary substitutes for natural foods. These lectures ought to be in the library of every medical practitioner; indeed, we are almost disposed to say of every intelligent adult.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

A Case of Myasthenia Gravis. By W. B. Warrington (*The Medical Chron.*, August, 1904.)– The patient, a well-nourished woman, aged 25, had complained of progressive weakness in the limbs for a period of eighteen months, and more recently there had been thickness in the speech and a difficulty in swallowing. When walking she quickly tired, and, indeed, after going a few yards required some sort of support to prevent herself from falling. The gait was slow and waddling, somewhat like that in pseudo-hypertrophic paralysis. When sitting in a chair one knee could not be lifted over the other, and she could not assume the standing posture without the aid of her arms. The movements of the leg and foot were fairly strong, the weakness being chiefly in the ileo-psoas and gluteal groups of muscles. There was no muscular atrophy, and the knee- and ankle-jerks were active. In the upper limbs the grasp was feeble, as were also the movements about the shoulder-joints. There was no change in the electrical reactions either in arms or legs. The muscles of the neck seemed intact, but there seemed some weakness in the muscles of the trunk. In the face there was involvment of the orbicularis oris, so that the lips could not be closed, and the other muscles of expression were also affected to a certain extent. There was ptosis which steadily increased after several efforts to raise the upper eyelids. There was also difficulty in keeping the eyelids firmly closed for any time. The associated lateral conjugate movements of the eyeballs were deficient in both directions, the upward movements being more affected than the downward. Fatigue could readily be produced in the lateral conjugate movements, so that the range of movement would be reduced by nearly a half. The muscles of mastication, of the soft palate, and possibly also those moving the vocal cords, were likewise affected.

During the three months the patient has been under observation her condition had remained stationary, there being almost no improvement in the affected muscles.

Diabetes of Pancreatic Origin, its Nature and Origin. By Professor Lancereaux (*Bull. de l'Acad. de Med.*, 28th June, 1904).—Diabetes of pancreatic origin has a grouping of symptoms so sufficiently distinctive as to make its differentiation from the other forms of diabetes a matter of no great difficulty. The suddeness of the onset, the intensity of the hunger and thirst, the large amount of urine, the large percentage of sugar, the rapid emaciation and debility point to the diabetes having a pancreatic origin. But the nature of the essential lesion in the pancreas has always been a matter of difficulty and dispute; and the following cases are advanced to support the view that it is in the islands of Langerhans that one must look for the specific cause of this form of the disease:—

CASE I was a man, aged 46. The symptoms set in somewhat suddenly, and the total duration of the illness was about five years. The quantity of urine averaged 5,000 c.c. in the twenty-four hours, the amount of sugar ranging from 6 to 9 per cent. The patient died from diabetic coma. *Post-mortem*, the pancreas was seen to be considerably atrophied and its lobules matted together. There was great increase of the fibrous tissues throughout the organ, causing atrophy and fatty degeneration of its parenchyma. There was almost complete disappearance of the islands of Langerhans.

CASE II was also a man of 46 years. The symptoms extended over three years, the quantity of urine being from 12,000 to 15,000 c.c. per diem, and the amount of sugar from 8 to 10 per cent. Death was from pulmonary tuberculosis. In this case there was also a diffuse sclerosis of the pancreas, with hyaline degeneration or complete absence of the islands of Langerhans.

CASE III was a man, 50 years of age. The duration of the illness was about three years; and death was from coma, though there was a tubercular lesion in one lung. The quantity of urine ranged from 6,000 to 10,000 c.c., and the sugar was sometimes up to 10 per cent. At the *post-mortem* the pancreas was found to be of very firm consistence, and greatly atrophied. Microscopically, it was seen to be composed chiefly of fibrous tissue, with the remains of the parenchyma still visible as isolated areas. The islands of Langerhans had entirely disappeared, except at a spot near to the splenic vein where there seemed to be an increase of this island tissue.

CASE IV was a man, aged 31, and the duration of his illness was nine and a half months. Death was from diabetic coma. The quantity of urine in twenty-four hours was about 5,500 c.c., and the sugar 10 per cent. The pancreas was much atrophied, weighing 35 grammes. There was no perilobular fibrosis, for the sclerosis was entirely periacinous, and there was almost complete disappearance of the islands of Langerhans.

In these four cases, then, it is the islands of Langerhans that seems to be the part of the pancreas most affected. In some of the cases the ordinary secreting cells of the organ were in places quite intact, but in all the cases the "islands" were considerably involved. It would seem, therefore, that it is the cells of the islands of Langerhans that produce the internal secretion of the pancreas which is so essential to the organism, and without which diabetes certainly supervenes.

A Case of Spleno-hepatic Fibrosis. By B. K. Fletcher and S. W. Sappington (*American Med.*, 6th August, 1904.)—The authors have difficulty in knowing how to classify this case, whether to regard it as a case of cirrhosis of the liver or as a case of splenic anæmia. If the lesion were primarily hepatic, then it should be called a cirrhosis of the liver; but, on the other hand, if the spleen were first enlarged, then one must look on it as a splenic anæmia. It is impossible to say which organ was first enlarged, and it is difficult even to surmise which it might be; but the pathological anatomy is essentially the same in both diseases, consisting in a greater or less increase in the connective tissue of first one and then the other organ.

The patient was a woman, aged 71. There was no alcoholic or syphilitic history, but she had malaria at the age of 30. About eighteen months before admission to hospital, a swelling was noticed at the lower border of the ribs on the left side. This had gradually increased in size, and much more rapidly during the past four months. The patient had also noted a swelling on the right side of the abdomen, but she could not say which swelling was first present. For ten years past she had not been able to bear any clothing tight round her waist, as it caused her great discomfort. She said she has lost considerably in weight during the past few years, and on examination she was seen to be a thin, sallow woman, with a greatly distended abdomen. The spleen could be felt 3½ inches below the level of the umbilicus, but the liver did not extend below the umbilicus. There was no enlargement of lymphatic glands, and no distended veins were visible. The urine had a specific gravity of 1024, and contained no albumen. Examination of the blood showed the red corpuscles to number 4,100,000, and the hæmoglobin registered 48 per cent. The white cells were 136,000, made up of—

Polymorphonuclears,	89·2	per cent.
Small mononuclears,	1·7	,,
Large mononuclears,	2·8	,,
Eosinophiles,	1·4	,,
Basophiles,	0·3	,,
Myelocytes,	4·5	,,
Eosinophile myelocytes,	0·1	,,

The patient died about six weeks after admission, and during the time she was under observation there was no material change in the blood-count. *Post-mortem*, the spleen weighed 24 oz., and it was very firm and tough. Microscopically, there was seen to be general increase of the connective tissue, most marked in the reticulum of the pulp, and disappearance of the lymphoid follicles. The liver was not weighed, but it extended, in the right mid-clavicular line, 4 inches below the costal margin. It was the seat of a diffuse fibrosis, which, however, was neither multilobular nor monolobular, nor yet periportal; it was a monocellular cirrhosis, *i.e.*, it seemed to be a marked thickening of the capillary walls rather than an extensive production of connective tissue in new sites. The liver cells showed but little degenerative change, and there was no lymphoid infiltration. There was no ascites. The pancreas showed a diffuse increase of connective tissue, both interacinar and interlobular, but more especially the former. The islands of Langerhans were surrounded by considerable fibrous tissue, but hyaline degeneration was not observed. The kidneys showed a slight degree of interstitial nephritis, but their parenchyma was little involved. The marrow of the radius was soft, greyish-red, and rather purulent in appearance. In the rib it was normal. The splenic and hepatic arteries showed an extreme degree of nodular arterio-sclerosis, and the same change was found in the other abdominal vessels. The heart muscle was normal. The condition, therefore, was a general fibrosis affecting spleen, liver, blood-vessels, pancreas, and kidneys. The change was about equally marked in liver and spleen, and least marked in the kidneys. No explanation can be given for the great increase in leucocytes in the circulation.

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

Massage of the Heart for Chloroform Collapse.—W. W. Keen, M.D., LL.D., F.R.C.S. (Hon.), has a paper dealing with this subject in the *Proceedings of the Philadelphia County Medical Society* for 31st March, 1904.

It is founded particularly upon an interesting case of his own where the treatment was tried without success. The patient was, however, pretty nearly *in extremis* prior to the administration of the anæsthetic, and the case on this account cannot be regarded as a favourable one for testing the virtues or possibilities of the method.

Keen gives the details of a case in which Dr. Kristian Igelsrud, of Tromsö, Norway, had a successful result. The patient was a thin cachectic woman, aged 43, with carcinoma of the uterus. Total abdominal hysterectomy was performed. Towards the end of the operation collapse occurred. Artificial respiration, lowering of the upper end of the bed, faradisation, and the other routine means were used for three or four minutes without result. The heart was then exposed by resecting parts of the fourth and fifth ribs, the pericardium was opened, and the heart seized by thumb, fore and mid fingers on the anterior and posterior surfaces. Strong and rhythmical pressure was made for about one minute, when the heart began to pulsate of itself. After a pause, during which the pulsations seemed to be failing, massage of the heart was practised for about one minute more. From that time the heart contractions became regular. The patient recovered, and left the hospital after five weeks.

Igelsrud states that, though the case may not be perhaps regarded as entirely convincing, inasmuch as the ordinary means for resuscitation were tried for only three or four minutes, and traction on the tongue was employed simultaneously with massage of the heart, yet his personal belief is that the massage of the heart was the most effectual of all the means employed.

Keen discusses the subject of resuscitation of the heart from the experimental and physiological point of view, as well as from the purely clinical standpoint, and cites the work of such investigators as Schiff, Prus (Lemberg), Batelli, Kuliabko, Velich, Spina, Gottleib and Cleghorn, and Crile of Cleveland. This survey is of such interest that it is here outlined somewhat fully.

Schiff, in 1874, by means of rhythmical compression of the ventricles by the hand, first succeeded in re-establishing cardiac pulsation.

Prus, in 1889, experimented upon 100 dogs—44 killed by asphyxia, 21 by chloroform, and 35 by electricity. Some of his attempts at resuscitation were begun as late as an hour after the heart had ceased to contract. The heart being laid bare *in situ*, rhythmical movements were instituted by the hand (thumb on right ventricle and the other fingers on the left). In 47 out of the 100 he was able to set up cardiac contractions in a wholly normal manner after efforts varying from fifteen seconds to two hours, and in 8 cases less complete contractions resulted.

Batelli worked on similar lines, and was able to resuscitate several dogs apparently quite dead. Both he and Prus advocated the application of the method to man in cases of cardiac arrest from chloroform asphyxia.

Kuliabko obtained (in 1902) regular contractions of a rabbit's heart removed from the body and kept at a temperature of 40° C. Even after being kept in an ice-chest for eighteen hours, the experiment was again successful. In less than half a minute contractions were visible around the orifices of the vena cava; in half an hour fairly strong rhythmical contractions of the right ventricle were observed, but none of the left; in four and a half hours the pulsations ceased. In one case contractions were re-established after the heart had been twenty-four hours in ice, and in another pulsations continued over three hours after the heart had been forty-four hours similarly treated.

Kuliabko's first experiments were on hearts from healthy animals which had been killed. Later, he experimented on hearts taken from animals that had died of disease, and he was successful in getting the isolated heart, in a number of cases, to pulsate again, and to continue pulsating for several hours, after a longer or shorter circulation of Locke's fluid, even where two, three, or even four days had elapsed since the death of the animal.

His crowning experiments were on the human heart removed after death. The first case was that of a heart removed twenty hours after death from a boy, 3 months old, who had died from double pneumonia. Locke's fluid was used. After twenty minutes, long feeble contractions of the auricle began, which, later, extended to the ventricle; finally, the entire heart began to pulsate, and continued so to do for an hour. In some later instances, he claims to have re-established pulsations of the human heart as long as thirty hours after death.

Velich experimented with the heart of the dog, and was able to re-establish contractions after exposures of this to snow and ice for periods of varying duration. In his article Velich cites a new method proposed by Spina, of Prague. So far, attempts to start cardiac contractions had mostly been made by mechanical means, *plus* various devices for filling the heart. Spina injected into an artery (not a vein), in the direction towards the heart, a quantity of normal salt solution at a temperature of 35° to 40° C. (for a dog, 200 c.cm.) The fluid, before reaching the heart cavity, closes the aortic valves, and, finding its way into the coronary arteries, stimulates the heart-muscle itself. Spina was able in this way to revive the heart in animals whose brain and cord had been destroyed, or who had been poisoned with alcohol or other substances—*e.g.*, in one case where a dog had been poisoned with nicotine, and the heart had been quiescent for fully ten minutes, artificial respiration was begun, and 200 c.cm. of saline, with 1 per cent of grape sugar, were injected into the femoral artery in the direction of the heart. "Even during the injection pulsations of the heart began." These became stronger, until the circulation was re-established as in a normal animal.

Velich, Gottleib and Cleghorn experimented with adrenalin. Crile, of Cleveland, however, worked out the results of the latter more fully. He emphasises the fact that "*we cannot expect to restore the apparently dead to life by resuscitation of the heart alone.*" "Not only must the heart be made to beat, but the respiration must be re-established, and the vasomotor centre must be stimulated into renewed activity." "To massage of the heart, therefore, we must add artificial respiration, and to both of these the means to restore vasomotor activity. These means he has shown by experiment to be infusion of adrenalin in salt solution and the pneumatic rubber suit. By the above means, without the rubber suit, he has repeatedly resuscitated animals whose heart had entirely ceased to beat for fifteen minutes. The pneumatic rubber suit can be inflated at will, and thus the blood-pressure be maintained at any given level." "He relates several instances in which its use in man during operations seemed to be of great value. The most striking is that of a man with a severe depressed fracture of the skull, whose heart had ceased to beat for nine minutes. The heart was restored to rhythmical action, with a full radial pulse for thirty-one minutes, and, while the bone was being elevated, he made voluntary movements of the head."

Keen, having made a *résumé* of all the recorded cases in which massage of the heart has been employed, finds that such a procedure has been attempted on 27 occasions. Of these, failure resulted in 24, restoration following in only 3. Keen suggests that this meagre result might be very greatly added to by accepting the proposition advanced by Crile—viz., that "the vasomotor and the respiratory centres must be awakened into rhythmical action, as well as the blood be started on its vital round, before we can hope to recall the apparently—or, shall we say really?—dead to life." "To accomplish this, massage of the heart, artificial respiration, the infusion of adrenalin in salt solution, and, possibly, Crile's ingenious pneumatic rubber suit, will all aid."

Keen indicates the three methods by which the heart has been made accessible for massage. These are:—

"1. By compression between the hands, one being applied outside the chest and the other directly upon the heart after an abdominal section, but without opening the diaphragm.

"2. By abdominal section, and, after opening the diaphragm, seizing the heart within the pericardial sac.

"3. By resection of the chest wall, incision of the pericardium, and grasping the heart with one or both hands."

Keen, in his own case, made incisions parallel to the third and fifth ribs, and joined these by a vertical incision along the left border of the sternum, the base of the flap being thus external. By this method, "the division of the bones can be made next the sternum through the cartilages of the ribs," a strong pair of scissors being all that is required for the division of the ribs at other points. The only thing that calls for special care is the detachment of the pleura without opening its cavity.

As regards the use of adrenalin, Keen points out that Crile has already emphasised the fact that this must be continuously given so long as the necessity exists. "It will be rarely useful, for example, to give one dose of adrenalin and give no more, because it is quickly eliminated, and its effect is evanescent." Keen advises that it be given in the strength of 10 to 30 drops of the 1-1000 solution in a pint of salt solution.

Phosphatic Calculi of the Bladder: Remarkable Preventive Efficacy of Urotropine.—In the *Annales des Maladies des Organes Génito-Urinaires* for 1st July, 1904, is a long and comprehensive paper by Dr. T. P. Guiard on the pathology, mode of formation, symptoms, diagnosis, course, and tendency to recurrence, treatment—curative and preventive—of phosphatic calculi of the bladder, of calculi, that is to say, forming, in the majority of cases, as complications of prostatic enlargements associated with septic infection and incomplete retention.

The whole paper is of great interest, but the following points representing some of the author's personal conclusions, are of chief importance, and especially should attention be directed to the high value placed by Guiard upon urotropine as a preventive to formation or re-formation of such phosphatic stones.

1. The diagnosis of such calculi by direct exploration, though rendered at times almost impossible by an excessively prominent middle lobe of the prostate, may be remarkably simplified by placing the patient in the full Trendelenburg position. By this means, the fundus of the bladder becomes the most dependent part, the calculi fall down of their own weight, and can be very easily found by metallic sound or by lithotrite.

2. The recurrence of these calculi is very common. It is necessary, therefore, to take steps to prevent their re-formation. The classical means, catheterism, washing out the bladder with boric acid, and the like, though useful, are far from being reliable enough. We now possess, however, in urotropine, an agent well meriting the greatest confidence. It is the most powerful antiseptic of the urinary apparatus. While actively counteracting the development of micro-organisms, it limits or controls the two factors essential to the formation of phosphatic calculi, viz., (*a*) the alkaline or ammoniacal reaction of the urine and the resultant precipitation of the salts; (*b*) the transformation of the pus

into a viscid agglutinated mass which would tend to englobe the precipitated salts. Guiard reports the case of a patient who had submitted to lithotrity twenty-two times in the space of ten years, but who was afterwards treated energetically and perseveringly with urotropine, no further recurrence of the calculi taking place (the cure had been maintained, in fact, for three years—up to the date of Guiard's paper). The author thinks that this case furnishes the clearest possible proof of the really preventive action of the drug. Urotropine may be given in doses of half a gramme every six hours—1·5 grammes to 2 grammes in the twenty-four hours.

3. If, in spite of the most methodical *lavage*, and the prolonged administration of urotropine, recurrence continues to take place, it may still be possible to avoid recourse to the graver operative procedures by submitting the patients, at regular periods of four to five weeks, to what Guiard terms "séances préventives" of thorough *lavage*, and aspiration of the bladder contents through the large evacuating sound or catheter which one employs for lithotrity. This is the surest method of encouraging the passage of recently formed calculi which, though inoffensive by reason of their still minute size, would still inevitably grow, and at no distant date give rise to troublesome effects.

4. Perineal prostatectomy, according to the author, is likely to afford the best guarantee against the formation of secondary calculi. It will certainly be effective in the cases where sepsis has been completely got over; it may even be so in a good number of those cases where infection recurs or continues. Some, however, of these will remain indefinitely infected, even though freed from all retention by the sacrifice of their prostate, and, consequently, there will be still the risk of recurrence of the calculi.

It will be necessary in these cases to follow out the various preventive means already described, means which therefore should be sufficiently guarded and appreciated.

The Application of Dry Heat and Cold in the Treatment of Acute and Chronic Urethral Inflammations: A Modified Hydraulic Dilator.—In the *Annales des Maladies des Organes Génito-Urinaires* for 1st July, 1904, Dr. Pierre Bakaleinik, of Kiew, describes a simple instrument devised by him. The description is accompanied by an illustrative sketch showing the dilator arranged for use, the bulbous expanded tip of the tube in position in the urethra.

Setting out with the knowledge that a temperature of over 40° C. (104° F.) destroys gonococci, Bakaleinik has arranged the elastic tube of his hydraulic dilator so as to admit of its use in introducing, to any definite localised point in the urethra, either dry cold or dry heat. For this purpose, the tube has been covered with a fine envelope of silk, which is a bad conductor of heat or cold; the tip of the tube which, within a known, definite limit, admits of expansion, is left uncovered for a distance of 3 to 4 centimetres. The tube is fixed to a metal cylinder, fitted with a piston which can be withdrawn or pushed home gradually by means of a screw. The tube and cylinder having been filled with water, cold or hot, they are screwed together, and the tube is passed into the urethra. By a turn of the cylinder screw, the terminal elastic part of the tube is dilated, a bulbous sac filled with water of a given temperature being thus produced. This can be placed in the most intimate contact with the affected part of the urethral mucous membrane, gradually smoothing out all the folds of the latter by light hydraulic pressure. The temperature can be exactly regulated (raised or lowered) by plunging the cylinder into a beaker of ice, or into water raised to any desired heat by means of a spirit lamp, a thermometer indicating the temperature. The metallic cylinder of the hydraulic dilator, being a good conductor of heat or cold, takes almost at once the temperature of the water which surrounds it, transmits it to the water which it contains, and thus also to the water in the elastic tube.

In urethritis and acute prostatitis, Bakaleinik raises the temperature (by dry heat) slowly and gradually to 50° C. (122° F.), and applies it directly to the affected mucosa.

DISEASES OF THE THROAT.

BY JOHN MACINTYRE, M.B., C.M., F.R.S.E.

On the Mode of Origin of Nasal Polypus.—Dr. Yonge (*Journal of Laryngology*, September, 1904), in a paper on this subject communicated to the Section of Laryngology and Otology at the annual meeting of the British Medical Association, held in Oxford this year, has summarised his provisional conclusions.

After describing the plan of investigation, the histology of the region in which the neoplasms grow, the process of formation, the production of œdema and the development of œdematous folds, degeneration and cystic dilatation of the mucous glands, as well as the influence of structural peculiarities in the same region, he states the following are his provisional conclusions, admitting the necessity of further investigation:—

1. Mucous polypi of the nose, in the majority of instances, are probably consequent upon and certainly coincident with inflammation of the mucous membrane of the nasal cavity.

2. The primary mechanical process is a localised œdema of the inflamed mucous membrane, which œdema, on account of certain structural peculiarities of the lining membrane, does not, in the great majority of cases, develop in any intranasal area, but that of a portion of the middle turbinal and of the middle meatal regions. Analogous structural peculiarities are present in the mucous membrane of some of the accessory sinuses.

3. The determining cause of the œdema, in the regions specified, is the degeneration and cystic dilatation of the mucous glands.

4. The particular shape which polypi usually assume, their number, probably the appearance, in some instances, of recurrences and other special peculiarities of these growths, are due to the œdematous mucous membrane being thrown into folds, and to the normal folds becoming œdematous. Certain of the folds quickly increase in size by the absorption of serous fluid and favoured by gravity, and finally present the appearance of ordinary mucous polypi.

5. The "polypoid" outgrowths, which take origin on the inferior turbinal, and more rarely on the septum, generally differ markedly in microscopic structure from mucous polypi, and although they claim a common inflammatory origin, these conditions are distinct, principally on account of the dissimilar structure of the nasal regions from which they respectively take origin (Zuckerkandl).

Treatment of Congenital "Saddle-Nose" Deformity: Use of a Celluloid Plate.—Considerable attention having been paid of late to malformations of the nose, it is interesting to record the paper of Dr. Wiener (*Medical Record*, 16th April, 1904) upon the improvement of congenital saddle-nose deformity by the introduction of a celluloid plate. A piece of celluloid one inch long, half an inch wide, and one-thirtieth of an inch thick, after sterilisation, was introduced through a short incision made in the medial line in the under surface of the nose. A small subcutaneous flap was made through the small opening over the depressed bridge of the nose, and then the celluloid was introduced so as to occupy the space made by the subcutaneous flap. The whole was then moulded into a definite shape, and the original suture closed. Further experiments will no doubt be tried in this treatment, and the results will be watched with interest.

Forman for Simple Catarrh of the Upper Respiratory Passages.—Dr. Siefert, of Würzburg (*Wiener kl. Rundschau*, 2nd April, 1904), recommends the use of forman—chlor-methyl, menthol-ether—for simple catarrh of the upper respiratory passages by means of inhalation, and considers that in some instances it gives relief in bronchial catarrh and asthma as well.

BACTERIOLOGY.

By ALEX. R. FERGUSON, M.D.

Bacteriological and Anatomical Studies in Scarlet Fever, with a Review of the Condition of the Blood (Jochmann, *Deut. Archiv für Klin. Med.*, Bd. lxxviii).—The author examined the blood bacteriologically during life in 161 cases of scarlet fever. In 25 cases he found streptococci in the blood; in 2 cases, Fraenkel's diplococcus lanceolatus; in 1 case, bacillus paratyphosus.

The streptococci found agreed completely in their morphological and biological properties with the streptococcus pyogenes longus *seu* erysipelatos.

The organism was found in the blood during the first week in 9 of the cases; in the remaining 16 it was found from the second to the fifth weeks of the illness. It is important to note that the author never found streptococci on the first or second day of the fever.

The clinical picture presented by those children in whose blood streptococci were found could not be differentiated in any respect from that of severe cases of scarlatina in which no streptococci were present. Cases in which streptococci were present in the blood were found, almost without exception, to terminate fatally.

Deducting those cases in which scarlatinal nephritis proved fatal, the author found streptococci appearing in the blood in about 50 per cent of cases dying in the course of a scarlatinal infection. The organisms appeared in the blood in these cases shortly before death.

The number of streptococci found in the blood during life is very small as compared with that found in the blood *post-mortem*. Nevertheless, it is important to notice that streptococci can multiply in the blood during life. Seventy cases of scarlet fever were examined bacteriologically *post-mortem*. The blood was examined in 66 cases, the spinal cord in 16 cases, the parenchyma of the kidney in 54 cases, and the spleen pulp in 65 cases.

From the blood of the cadaver, streptococci were obtained in 50 cases, the remaining 16 being sterile; from the spinal cord streptococci were obtained in 14 cases, staphylococci being isolated from the other two examined.

The kidneys and spleen gave positive results as regards streptococci in 35 and 45 cases respectively. It is therefore obvious that a general streptococcal infection plays a most important part in scarlatina, but it cannot be concluded with certainty that this constitutes the specific cause of scarlatina.

Pneumococcal Peritonitis (Ghon, *Wiener Klin. Wochenschr.*, 1904, No. 10).—After reviewing the literature of previously described cases of the affection, the author describes fully four cases in which a fibrino-purulent peritonitis was traceable to an infection with the pneumococcus from the stomach. The diplococcus pneumoniæ was found in these cases either in pure culture or in such significant quantities that it could reasonably be regarded as the pathogenic agent in producing peritonitis.

In two of these cases pneumococcal infection had without doubt originated in the healthy buccal cavity. which not infrequently harbours virulent pneumococci. These, the author maintains, may reach the stomach, and set up a pneumococcal infection in the upper part of the digestive tract.

In three cases in which operations on the stomach had been performed pneumococci were isolated from patches of concurrent pneumonia. In these cases the bronchial secretion, laden with pneumococci, had been swallowed, and given rise to general peritonitis. The author concludes that a close relationship may be established between sputum swallowed in cases of pneumonia and peritonitis. The importance of this question to surgeons operating on the stomach and upper part of the intestine is obvious, and the author urges attention to the mouth and pharyngeal cavity as one of the items of preparation for abdominal operations.

Books, Pamphlets, &c., Received.

Our Baby: For Mothers and Nurses, by Mrs. J. Langton Hewer. Ninth Edition. Revised. Bristol: John Wright & Co. (Cloth, 2s. 6d.; Paper, 1s. 6d.)

Clinical Diagnostic Bacteriology, including Serum Diagnosis and Cytodiagnosis, by Alfred C. Coles, M.D., D.Sc. With Coloured Plates. London: J. & A. Churchill. 1904. (8s. net.)

Handbook of Physiology, by W. D. Halliburton, M.D. Sixth Edition (being the Nineteenth Edition of Kirkes' Physiology). With nearly seven hundred Illustrations, including some Coloured Plates. London: John Murray. 1904. (15s. net.)

Health and Disease in Relation to Marriage and the Married State. Edited by Geh. Medizinalrat Prof. Dr. H. Senator and Dr. med. S. Kaminer. The only authorised Translation from the German into the English Language, by J. Dulberg, M.D. Vol. I. London: Rebman, Limited. (Complete in 2 Vols., 30s. net. cloth; 35s. net. half leather.)

A Text-Book of Pathology for Practitioners and Students, by Joseph M'Farland, M.D. With 350 Illustrations, a number in Colours. London: W. B. Saunders & Co. 1904.

An Atlas of Human Anatomy for Students and Physicians, by Carl Toldt, M.D., assisted by Prof. Alois Dalla Rosa, M.D. Translated from the Third German Edition and Adapted to English and American and International Terminology by M. Eden Paul, M.D. Fifth Section. *F.* Angeiology (Figures 933 to 1123 and Index). London: Rebman, Limited. 1904. (13s. 6d. net.)

The Student's Handbook of Surgical Operations, by Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S. New Edition. Revised by the Author and Jonathan Hutchinson, Jun., F.R.C.S. With 121 Illustrations. London: Cassell & Co., Limited. (7s. 6d.)

The Nervous Affections of the Heart: being the Morison Lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903 by George Alexander Gibson, M.D. Edinburgh: Young J. Pentland. 1904.

Enlargement of the Prostate: Its Treatment and Radical Cure, by C. Mansell Moullin, M.D. Third Edition. London: H. K. Lewis. 1904. (6s.)

On the Classification and Pathology of Beri-Beri, by Hamilton Wright, M.D. London: John Bale, Sons & Danielsson, Ltd. December, 1903. (3s. 6d. net.)

The Cancer Problem in a Nutshell, by Robert Bell, M.D. London: Baillière, Tindall & Cox. (1s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 17TH SEPTEMBER, 1904.

	Week ending			
	Aug. 27.	Sept. 3.	Sept. 10.	Sept. 17.
Mean temperature, . .	54·0°	60·8°	56·1°	55·0°
Mean range of temperature between day and night, .	25·0°	29·4°	23·0°	31·2°
Number of days on which rain fell, ...	5	2	6	1
Amount of rainfall, . ins.	0·31	1·04	1·23	0·01
Deaths registered, . . .	267	284	231	272
Death-rates, ...	17·5	18·6	15·1	17·8
Zymotic death-rates, . .	1·5	1·8	1·4	0·9
Pulmonary death-rates, .	3·4	3·1	2·9	2·8
Deaths—				
Under 1 year, ...	71	81	54	80
60 years and upwards, .	43	51	42	50
Deaths from—				
Small-pox, ...	...	1	...	1
Measles, ...	2	3	4	2
Scarlet fever, ...	3	1	1	...
Diphtheria, ...	...	2	2	2
Whooping-cough, . .	17	16	9	6
Fever, ...	1	2	2	2
Diarrhœa, ...	37	34	22	42
Croup and laryngitis, .	...	...	...	...
Bronchitis, pneumonia, and pleurisy, ...	25	24	28	22
Cases reported—				
Small-pox, ...	...	2	4	1
Diphtheria and membranous croup, ...	16	15	17	16
Erysipelas, ...	10	18	8	22
Scarlet fever, ...	27	33	29	34
Typhus fever, ...	1	1	...	...
Enteric fever, ...	16	16	22	13
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	4	2	3	1
Measles,*	34	24	20	25

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *23rd September, 1904.*

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ORIGINAL ARTICLES.

MOVABLE DISPLACEMENTS OF THE KIDNEY.

By DAVID NEWMAN, M.D., F.F.P.S.G.,
Surgeon, Glasgow Royal Infirmary.

(*Continued from* p. 199.)

4. *Those in which the pain is distinctly renal, and is associated with—*

(*a*) Albuminuria only.
(*b*) Albuminuria and tube-casts.
(*c*) Hæmaturia, and in some blood-casts.
(*d*) Transitory hydronephrosis.
(*e*) Pyonephrosis.

This series forms one of the most interesting groups in that the pathology is clearly defined, and the most satisfactory results are attained by treatment. A circumstance I have observed, and one that is worthy of note, is that in these cases there are no signs of a neurotic tendency. In all, the symptoms are simply those due to mechanical obstruction to the circulation or to the escape of urine from the kidney. The first three symptoms, namely, albuminuria, the presence of tube-casts, and the appearance of blood, are clearly due to the obstruction of the circulation; whereas the two latter, hydronephrosis and pyonephrosis, are due to the obstruction to the urinary flow. When considering the pathology we pointed out the changes that take place when the kidney becomes movable, and attention was directed to the effects produced by twisting of the vessels, the nerves, and the ureter. Impediment to the flow of the arterial blood to the kidney is very rare; an account of the only case I have seen will be found in vol. lxi, at p. 420, where the full history of the case (Case IV) is given and the pathology discussed, so that it is not now necessary to add any further remarks.

In all cases that belong to this group the pain is referred to the region of the kidney as the site of its origin or of its greatest intensity, but in severe cases the pain radiates far beyond the lumbar region. When the displacement is such as to obstruct the venous return only, the suffering comes on gradually, and is of a steady, dull, aching character. When it is so complete as to cause hæmaturia, the renal pain may begin very suddenly, simulating renal calculus, and may be accompanied by severe gastric disturbance, nausea, and vomiting. Occlusion of the ureter causes more severe pain than obstruction to the venous return, is associated with more or less swelling from distension of the pelvis, and is accompanied by retention of urine. When the obstruction to the venous return is slight and of short duration, the only changes observed are a diminution in the quantity of the excretion and the presence of albumen; but if the obstruction be serious and prolonged, tube-casts may be found in the deposit, and the organ is increased in size. Torsion of the renal vessels and of the ureter may lead to one or more of the following symptoms:—

1. Albuminuria with or without tube-casts.

2. Hæmaturia, sometimes coincident with blood-casts in the urine.

3. Dull, aching pain in the renal region almost constantly present, and associated with occasional paroxysms of colic similar to that produced by calculus. But while the paroxysmal pain, the hæmaturia, and the general gastric disturbance are similar in character and in mode of onset to what is observed in calculous disease of the kidney, in addition to, and frequently coincident with, the symptoms just mentioned, there is sudden diminution in the quantity of the urine. The subsidence of the renal pain is soon, but not immediately, followed by copious flow of urine of high specific gravity, instead of low as in transitory hydronephrosis. The hæmaturia associated with blood-casts in the urine, and the renal pain concurrent with

sudden appearance of albuminuria and tube-casts, are important circumstances in forming a diagnosis.

Impediment to the escape of blood along the veins produces increased vascular tension, indicated by pain, in most cases by slight, but in a few by considerable, increase in the size of the kidney, and in many cases by reduction in the quantity of the excretion.

When frequently repeated over a long period, venous obstruction is certain to lead to atrophy of the organ, but, fortunately, the sickness and pain induced by the condition forces the patient to take rest in bed, thereby the normal position of the kidney is restored, and the twisting of the pedicle rectified. In the majority of my cases of torsion of the veins, the paroxysms of pain were associated with sudden and transitory albuminuria, diminution, but seldom with suppression, of urine.

CASE XII.—*Severe pain and tenderness on pressure, with a little increase in the size of the kidney—Diminution in excretion—High specific gravity of urine—Albuminuria and tube-casts.*

D. R., an electrical engineer, aged 35, consulted me on 5th November, 1901, presenting symptoms and physical signs of right movable kidney. He was anæmic and emaciated, but beyond the symptoms referable to movable kidney, he said that he enjoyed good health. His heart was normal. While at work in November, 1899, he strained himself by lifting a heavy weight; this he blamed for his present trouble, and from his accurate account of what occurred I am convinced that his explanation was correct. Liable to frequent and severe attacks of paroxysmal pain, he was advised to see me with a view of having a calculus removed from his right kidney. Cystoscopic examination proved the bladder to be strictly normal, there were no changes in the appearance of the uretral orifices, and *x*-rays failed to show the presence of a stone in either kidney; but the presence of well-marked movable kidney encouraged the belief that the displacement was to blame. To confirm this I kept the patient under observation for six weeks, allowing him to take free exercise. During that time he had two attacks which I was able to observe, and note details regarding the excretion of urine. While resting he had no inconvenience, but if he took active exercise, such as walking, driving, or playing outdoor games, he was certain to suffer. The paroxysms came on suddenly and lasted from eighteen to twenty-four hours, and were accompanied by sickness, nausea, vomiting, and severe headache. I carefully watched the urine, each sample being examined. The following table shows the condition of the urine during one of the attacks:—

Date.	Time.	Quantity, in ounces.	Sp. Gr.	Remarks.
1902. Feb. 2	6 P.M.	10	1015	No albumen, no tube-casts.
,, ,,	11 ,,	15	1014	No albumen, no tube-casts.
,, 3	8 A.M.	16	1020	No albumen, no tube-casts.
,, ,,	1 P.M.	8*	1024	Albumen in considerable quantity, and tube-casts, epithelial and hyaline; no blood.
,, ,,	9 ,,	7	1030	
,, 4	6 A.M.	8	1028	
,, ,,	1 P.M.	6	1028	
,, ,,	6 ,,	5	1025	
,, 5	12·30 A.M.	18	1018	
,, ,,	3 A.M.	20	1016	Trace of albumen, no tube-casts.
,, ,,	5 ,,	16	1010	
,, ,,	8·30 ,,	12	1010	No albumen.

* Pain set in at 11·45 A.M., and at 1 P.M. was very severe, and continued till 6·30 P.M. on 4th February.

It will be observed that prior to the attack from 6 P.M. on 2nd February till 8 A.M. on 3rd February, 41 oz., or about 3 oz. of urine per hour, were excreted, and the specific gravity was between 1015 and 1020. From 1 P.M. on 1st February till 6 P.M. on 4th February, 26 oz., a little under 1 oz. per hour. The specific gravity varied from 1024 to 1030, and the urine contained albumen, epithelial and hyaline tube-casts, but no blood. After the pain passed off, the albumen diminished in quantity and disappeared in a little over twenty-four hours. Cure was effected by fixing the kidney.

In all the cases of movable kidney in which albuminuria has been observed in consequence of torsion of the pedicle, the sequence of events has been similar to those observed in the above case. In a paper published in 1896, I drew attention to this subject, and illustrated it by several cases.[1]

In cases of movable kidney, albuminuria may be met with where it is not simply due to vascular disturbance, a direct result of the displacement, but rather to organic changes in the organ itself. Bright's disease is not uncommon in such cases, but it is easily detected, even in its early stages, from the cases above referred to, by the fact that the albuminuria is persistent, not transitory. The great distinction between albuminuria in Bright's disease and that of surgical diseases of the kidney is in their causation. In the latter, the albuminuria is due to some local injury to the kidney, some direct interference with its circulation, or the local action of microbes, and consequently, the general symptoms mentioned below are seldom observed; whereas in Bright's disease the renal lesion is only a part of the disorder. The toxic material being in the blood, all organs suffer more or less, but the kidneys, being the most active excretory organs, their functions become impaired early in the course of the illness, and the structural changes in the renal parenchyma are often the most pronounced feature of the malady. If the disease is advanced, morbid changes in other organs are indicated by signs and symptoms which furnish a means of estimating the diagnostic importance of the albuminuria, The persistence of albuminuria is one of the most important points, and can be easily ascertained by examining the urine regularly day by day, at different hours of the day. When albumen is found to be present in but slightly varying quantity in a patient beyond 40 years of age, in the absence of well-defined pain in the lumbar region it may generally be presumed that the albuminuria is the result of some form of Bright's disease; and, should the urine be almost constantly pale in colour, of low specific gravity, and deposits granular or epithelial tube-casts, then the diagnosis of organic disease of the kidney is distinctly strengthened. The effects of rest are most marked in cases of albuminuria which are not due to Bright's disease. In cases of movable kidney, albuminuria generally disappears in a few days after the patient has taken to bed, and conversely exercise and work at once induce an increase. When the albuminuria is due simply to passive hyperæmia, the amount of albumen varies from day to day, while the urine is scanty, deeply coloured, and of high specific gravity. On the other hand, in cases of chronic Bright's disease, while the quantity of albumen may likewise vary, the excretion is generally abundant, of a pale colour, low specific gravity, and there is not only a relative but also an absolute diminution in the quantity of urea and the other urinary ingredients.

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[1] "Cases Illustrative of the Relationship of Movable Kidney to Transitory Hydronephrosis and Intermittent Albuminuria and Treated by Operation, *Transactions of the Clinical Society of London*, vol. xxix, p. 55.

In about 6 per cent of my cases of movable kidney, symptoms of Bright's disease have been observed, but in nearly all the mobility of the kidney has been of very old standing. In some of these, I am convinced that the albuminuria has been diminished and the symptoms mitigated by operation, and in others the albumen has completely disappeared from the urine.

Hæmaturia has been observed in 12 per cent of my cases, and in 7 per cent the bleeding has been severe. This pronounced symptom is a consequence of interference with the venous flow from torsion of the renal vein. The pathology of this subject has been very fully discussed already. I shall only cite two cases in illustration. The most marked case which has come under my observation was one which I operated upon in 1896.

CASE XIII.—*Severe paroxysmal renal pain and hæmaturia without gastric disturbance—Occasionally blood-casts in urine, frequently tube-casts, and sometimes albumen independent of blood—Movable displaced kidney—Cured by operation.*

T. L., æt. 50, an ironmoulder, was admitted to the Glasgow Royal Infirmary on 30th January, 1893, complaining of severe pain in the region of the left kidney, shooting downwards and forwards in front of the abdomen. These paroxysms of pain usually came on after exercise, and lasted for several minutes at a time, while during the six months prior to admission he almost constantly suffered from an aching pain in the left side. At the onset of the attacks of paroxysmal pain, the urine was of a dark red colour and contained a large quantity of blood, but gradually the quantity of blood diminished and the urine became bright red.

The patient was a very well-nourished man, short in stature, weighed 14¼ stones, and very stout, so that an examination of the renal region with the hand did not reveal anything—even firm pressure applied to the part did not give pain—and no increased muscular resistance could be made out. During residence in hospital the patient was kept strictly in bed, and from 30th January till 6th March he only complained of the dull aching pain; he had no paroxysmal attacks, and no hæmaturia nor albuminuria. He was readmitted on 8th May, 1893, having suffered from several attacks since he left the hospital in March.

On 10th May, the following note was made:—"Until the present time the symptoms all pointed to the presence of a stone in the left kidney. The pain was clearly increased by exercise and relieved by rest, and so also was the hæmaturia. Yesterday he had an attack of renal colic and hæmaturia, and the following is a note of the condition and quantity of the urine:—

1893.	Ounces of Urine.	Remarks.
May 9, 6 P.M.	12	Urine clear; traces of albumen; a few tube-casts. No pain. Sp. gr. 1013.
,, 9, 10 P.M.	4	Pale urine. Sp. gr. 1020.
,, 9, 11 P.M.		Severe paroxysm of pain in left side.
,, 10, 5 A.M.	6	Urine dark porter colour. Sp. gr. 1024. Blood abundant. Blood-casts. Pain still continues severe.
,, 10, 8 A.M.	18	Pale red, blood-stained urine. Sp. gr. 1008. Pain gone.
,, 10, 12 NOON.	15	Trace of blood only. Small quantity of albumen. Sp. gr. 1011.
,, 10, 7 P.M.	9	Clear urine. Sp. gr. 1015. No albumen; no tube-casts.”

The presence of blood-casts in the urine suggests the source of hæmorrhage as being in the renal substance rather than the consequence of a calculus in the pelvis of the kidney.

19th May, 1893.—The patient remained well, and since 8 A.M. on the 10th inst., there has been no pain; and no blood, tube-casts, or albumen since 7 P.M. on the same day.

The presence of blood-casts in the urine was observed for the first time on 10th May, and gave quite a new aspect to the hæmaturia, which, prior to this time, was regarded as due to the presence of a stone in the left kidney.

The patient remained well till 1st June, when he left the ward, not having had any recurrence of pain or of hæmaturia.

Readmitted, 22nd June, 1896.—Since leaving the hospital in June, 1893, the patient has suffered more or less pain in the region of the left kidney, which is increased by exercise and relieved by rest in bed. The pains and the hæmaturia present the same characteristics as formerly, but now there is considerable tenderness on palpation at a spot midway between the crest of the ilium and the last rib on the left side. On account of the stoutness of the patient, palpation fails to reveal the condition of the left kidney.

Considering that rest in bed only gave temporary relief, and that the patient was incapacitated from following his occupation by the frequency of the attacks, he was advised to submit to an operation for the purpose of ascertaining the precise condition of the left kidney, and if possible of relieving it permanently.

On 29th June, an incision was made down to the left kidney, when it was found to be moderately movable, displaced upwards and forwards, and rotated on its short axis, so that the lower margin of the organ pointed forwards.

The adipose capsule was freely separated from the fibrous covering of the kidney, and a considerable portion of the loose fat removed. The fibrous capsule was then incised, stripped off the cortex for half an inch on either side of the incision, and stitched to the parietes. A large drainage-tube was inserted, and the deep parts of the wound kept open for ten days, after which it was allowed to heal.

In this case the symptoms—viz., paroxysmal renal pain increased by exercise and relieved by rest, hæmaturia, tenderness on palpation in the left renal region—all pointed to calculus in the kidney, but the presence of a few tube-casts, traces of albumen without pus or blood, indicated that the morbid condition affected the tissue of the kidney, while the occasional appearance of blood-casts pointed to the origin of the hæmorrhage. At the operation, a sufficient explanation was found. The rotation of the kidney so that the lower margin presented forwards must have caused the ureter and blood-vessels to be coiled round one another, and so impeded the circulation of blood. As a consequence, more or less severe passive hyperæmia was produced, varied in degree according to the precise position occupied by the kidney at different times.

The patient reported himself on 2nd November, 1896, and stated that while occasionally he has had slight pain in the cicatrix, he has had no return of the old renal pain, nor has any blood appeared in the urine. A specimen of urine examined was free from albumen and tube-casts.

(*To be continued.*)

A CONTRIBUTION TO THE PATHOLOGY OF THE ANTRUM OF HIGHMORE.

By A. BROWN KELLY, M.D., D.Sc.,
Surgeon for Diseases of the Throat and Nose, Victoria Infirmary, Glasgow.

(*Concluded from* p. 286.)

Antra Presenting Pathological Conditions.

The pathological changes noted were either in respect of the contents or lining membrane. The following classification is based on the naked eye appearances:—

1. Antra with normal lining membrane, but containing—(*a*) serous fluid, (*b*) mucus, (*c*) pus, (*d*) blood.
2. Antra with thickened lining membrane, and containing—(*a*) no fluid, (*b*) serous fluid, (*c*) mucus, (*d*) pus or muco-pus.
3. Antra with polypoid lining membrane, and containing—(*a*) no fluid, (*b*) serous fluid, muco-pus, or pus.
4. Antra with cystic lining membrane, and containing—(*a*) no fluid, (*b*) serous fluid, mucus, or pus.

Antra with normal lining membrane containing serous fluid.—Fluid other than blood, pus, or muco-pus was present in both antra in 9 subjects, and in one antrum in 11 subjects (6 times right side, and 5 times left side). In one of the 9 subjects a trace of blood was also found in both antra. As to the other antrum in the 11 subjects, in 8 instances it was empty and normal, in 1 it contained blood, and in 2 the lining membrane was thickened, pus being also present in one of the cavities.

As a rule the fluid had a grey, cloudy appearance, and amounted only to a few drops. In one case, however, its colour was dark brown, owing to jaundice; in another, light brown, possibly due to an admixture of blood; in a third, dirty green; and in a fourth and fifth, yellow.

The grey, cloudy fluid was found, on microscopic examination, to contain a few leucocytes, a large amount of shed ciliated epithelium—which imparted the cloudy appearance—and crowds of micro-organisms.

In my opinion, this fluid, when found in small amount, is of *post-mortem* origin. During life the lining membrane of the antrum is moist, and the contained air humid. Owing to the fall of temperature at death, the moisture in the air is deposited on the surface of the membrane, and, together with that already there and within its substance, being unable to escape through the bony walls, gravitates to the most dependent part of the cavity. A slighter degree of this condition was observed in some cases in which, although fluid was absent, the lining membrane at the lowest part of the antrum was moist, dull-white, and sodden, and contrasted strongly with the dry, glistening aspect at a higher level. These variations probably depend upon the condition of the antral lining membrane before death; if it has been saturated with moisture and actively secreting, the fluid contents at the necropsy will be more abundant, and *vice versa.*

The presence of a small quantity of greyish fluid in antra otherwise normal must not therefore be regarded as a pathological condition.

The quantity of fluid, however, on several occasions exceeded that stated above, varying from half a teaspoonful to about double that amount. While in some of these cases the fluid owed its origin to serous transudation, there is hardly any doubt that in others it flowed in from the nose, the mouth and nasal fossæ being filled with fluid similar to that found in the antrum. At the same time it should be noted that in several subjects, although the nasal cavities were full of fluid, only a few drops were found in the antra, showing that under certain circumstances—to be more fully considered under the remarks on blood in the antrum—fluids do not enter this cavity from the nose.

As to the condition of the nasal fossæ, hypertrophic rhinitis was found in 2 subjects, and perforation of the cartilaginous septum was present in 1 of these and in another case.

The causes of death in the above 20 subjects were—cardiac disease, 6; accident, 4; apoplexy, 2; and 1 from acute yellow atrophy of the liver, peritonitis, suppression of urine, and ovarian tumour respectively; in 4 instances the cause was unknown.

Antra with normal lining membrane containing mucus.—In 2 subjects mucus was found in one or both antra which were otherwise normal. In 1 of these there was merely a mass of mucus as large as a pea in the lowest part of both antra. In the other, one antrum was normal while the opposite cavity was largely filled with dark grey mucus, over which a stream of pus, entering through an ostium accessorium, passed. In the former subject the nasal fossæ were normal; in the latter the inferior turbinates were hypertrophied, and a large quantity of pus was present in the ethmoidal region.

The causes of death were respectively pernicious anæmia and cardiac disease.

Antra with normal lining membrane containing pus.—In 5 subjects pus was found in one or both antra the lining membrane of which was normal.

These cases illustrate various modes whereby pus may come to be present in the antrum. In 1 subject a purulent collection, due to a carious first molar, was situated beneath the lining membrane, which, apparently, was unaffected and presented no sinus. It is probably in consequence of the comparative slight changes in the lining membrane in such cases that they are cured as soon as the offending tooth is extracted.

In another subject pus could be traced through an ostium accessorium to a large collection in the nasal fossa, which had originated in one of the higher accessory cavities.

Lastly, in a child, aged 6 years, pus was found in both antra. The teeth underlying the antra were sound, and the ethmoidal and frontal sinuses, owing to their imperfect or non-development, could be excluded as seats of origin of the suppuration. The child died of pneumonia. It is probable that serous exudation had taken place and had undergone retrograde changes in consequence of the entrance of pyogenic micro-organisms.

The causes of death in the above cases were cardiac disease, 2; phthisis pulmonalis, 1; pneumonia, 1; and fracture of skull, 1.

Antra with normal lining membrane containing blood.—Blood was found in both antra in 6 subjects, and in one antrum in 3 subjects; in other respects the cavities were normal.

All the cases of blood in the antrum met with in the course of this investigation have been grouped together irrespective of the condition of the lining membrane, and under that series the above cases are described and their significance discussed.

Of the above 9 cases the blood came from an extra-antral source in 4; in 2 the hæmorrhage arose probably from the torn antral lining membrane: in 3 the origin was not determined. Leaving these last 3 cases, and another of doubtful nature, out of account, there are thus 5 in which the presence of blood may be regarded as accidental, and which should, therefore, be added to the series of normal antra.

Antra with thickened lining membrane, but with no fluid contents.—Five cases fall under this category. In all of these, the lining membrane was but little affected. When the thickening was more marked, it assumed a polypoid aspect; such cases will be considered later.

In four of the five cases, the lining membrane in both antra was thickened; in one, the antrum on one side was normal. Pus was present in one antrum, and mucus in another.

In four of the cases, the nasal fossæ were practically normal. In one on the right side, a polypoid condition of the mucous membrane existed in the region of the middle meatus, together with pus in the sphenoidal sinus.

The causes of death in these subjects were cancer of gall-bladder, cardiac disease, suppression of urine, pneumonia, and peritonitis.

Antra with thickened lining membrane containing serous fluid.—This class contains four cases. In one, a greenish, bile-like fluid filled both antra; in the right, pus was also present. In another, the left antrum was normal, while the right contained a yellow transparent fluid. A similar fluid was also found in the left antrum in a third subject. A thin cloudy fluid was present in the right antrum in this subject, and in both antra in the fourth subject.

The nasal fossæ were normal in two cases, while in the other two the middle turbinate on the same side as that on which the antrum contained yellow fluid was polypoid.

Three of the subjects died of cardiac disease, and the fourth of cancer of the liver.

Antra with thickened lining membrane containing mucus.—Four cases fall under this heading. In three of them, both antra were similarly involved; in one, the lining membrane of one cavity was thickened, but no contents were present.

Four of the seven antra were filled with mucus (mixed with pus in one case); in the other three, only a small quantity of mucus was present. As a rule, the mucus was grey, but in one subject it was yellow in both antra.

In the case in which only one antrum was involved, the nasal fossæ were normal; in one subject, hypertrophic rhinitis was present; in two, several polypi were found in the middle meatus.

The causes of death were accident (2), cardiac disease, and peritonitis.

Antra with thickened lining membrane containing pus or muco-pus.—In 11 subjects, one or both antra presented a thickened condition of the lining membrane, and contained pus or muco-pus. In 5 of these, both antra were thus involved. In the remaining 8, the lining membrane of the other antrum was normal in 6 and thickened in 2 instances, and in some cases the cavity was empty, and in others contained blood, bile-like fluid, or pus.

The nasal fossæ presented the following conditions:—normal, 3; hypertrophic rhinitis, 3; atrophic rhinitis, 3; polypi, 2.

These cases will be further considered under "Pus in the Antrum."

Antra with polypi or polypoid lining membrane.—Polypoid changes in the antral lining membrane were observed in 9 subjects, and assumed one of two aspects—either one or more distinct finger-like outgrowths resembling nasal polypi were present, as in 4 subjects, or the lining membrane was thickened, but on closer inspection the thickening was found to be made up of a number of broad-based, flat polypoid masses closely packed together; the latter variety was represented in 5 cases.

In 5 subjects, both antra were polypoid; in 4, only one, the other cavity being normal.

The single polypi sprang from the inner wall of the antrum, close to the ostium maxillare, or from the floor. When the polypoid development was more diffuse, it took place chiefly on the floor, or in the posterior part of the cavity.

In 3 cases, fluid of inflammatory origin—muco-pus or pus—was found in the affected antrum. In several of the other cases, fluid of extra-antral or *post-mortem* origin was present.

The nasal fossæ in 7 of the 9 subjects might be regarded as normal, while in 1 polypoid hypertrophy was present, and in another atrophic rhinitis.

The causes of death in the above subjects were malignant disease, 3; fracture of skull, 2; apoplexy, 2; Addison's disease, 1; and pulmonary phthisis, 1.

Wertheim distinguishes, as has been done here, two forms of antral polypi, namely, papillary hypertrophies of the entire swollen and œdematous mucous membrane, and growths with the same structure as nasal polypi, and he states that these may occur together in the same cavity.

Antral polypi are not uncommon, as the following statistics show:—

Luschka	met with	antral polypi	5	times in	60	necropsies	= 8	per cent.
Zuckerkandl[1]	„	„	6	„	300	„	= 2	„
Heymann[2]	„	„	14	„	250	„	= 5·6	„
Dmochowski	„	„	1	„	152	„	= 0.6	„
Kelly[3]	„	„	4	„	100	„	= 4	„

[1] Including strands passing between two antral walls.
[2] Including proliferations, cysts, congenital folds.
[3] Polypoid hypertrophy occurred in 5 other subjects.

Antra with cystic lining membrane.—Cysts in the antral lining membrane were found in 12 subjects; in 5 of these, they were present in both antra; in 6 in the left, and in 1 in the right; the other antrum was normal in these 7 subjects.

In most instances, only one, two, or three cysts were found in an antrum, but cystic degeneration of the greater part of the lining membrane was also observed. When the cystic change was limited to a small area, the rest of the lining membrane was, as a rule, normal.

The majority of the cysts were as large as a pea, some reached the size of a hazel-nut, and in at least one instance they were even larger.

Most of the cysts sprang from the inner wall or floor of the antrum. When several were present, they were usually grouped closely together.

The cysts contained, as a rule, greyish mucus; sometimes a thin, cloudy, or an oily, yellowish fluid, or white cheesy material.

In 4 subjects, fluid was found in the antrum itself. This proved to be pus in 2 cases, a transparent yellow fluid in both antra in another case, and in the fourth subject an almost clear fluid in the right, and a mixture of mucus and pus in the left, antrum.

Dmochowski states that, under certain circumstances, cysts may be the starting-point of a catarrhal or even purulent process of the whole sinus. Pathogenic micro-organisms may develop in very thin-walled cysts, and may irritate the cyst wall so that it becomes inflamed and easily bursts, in consequence of which the entire contents escape into the cavity.

One or several ostia accessoria were present in 5 of the 12 subjects. In 1 of the 5, both antra presented cysts and possessed at least one ostium accessorium. In all excepting 1 of these cases, the cysts were situated on the inner wall of the antrum, close below the ostium accessorium. This proximity, the occurrence of an accessory opening in these cases four times oftener than usual (41 per cent instead of 10 per cent), and the fact that nearly all the subjects in which cysts were found, as well as the majority of those having ostia accessoria, had passed middle life, would seem to indicate a relation between cystic changes in the antral lining membrane and the formation of ostia accessoria. I would suggest that the rarefactive process leading to the formation of the ostia may cause contraction of the connective tissue, blocking of the ducts, and development of cysts.

The nasal fossæ were normal in 7 of the 12 subjects; in 4, hypertrophic rhinitis was present; and in 1, atrophic rhinitis.

The causes of death were malignant disease, 4; pneumonia, 3; chronic bronchitis, 2; pulmonary phthisis, 1; apoplexy, 1; and accident, 1.

Dmochowski, who has studied antral cysts very fully, considered that it was useless to give statistics, as he found them so frequently; he referred, however, not merely to those visible to the naked eye, but to others seen only on closest examination. Luschka also stated that small cysts often occur in the antral lining membrane, and Giraldès found them frequently and in great number. Heymann, in 250 necropsies, met with such growths in 19 antra, in six of which the cysts were associated with other tumours.

BLOOD IN THE ANTRUM.

Blood was found in both antra in 9, and in one antrum in 4 subjects (12 males and 1 female).

The amount varied from a mere dry patch to a quantity sufficient to fill the cavity; in several instances it was mixed with mucus or pus.

The lining membrane, as a rule, was normal; in a few cases it was swollen or thickened. In one instance it contained extravasated blood; in two, it presented a bright red mottling; and in one, it was of a reddish-brown colour.

In considering the source of the blood, it is noteworthy that 7 of the 13 subjects died in consequence of head injuries, the majority of which were fractures of the skull. In one case death was due to profuse hæmorrhage from a wound of the trachea. In another, the patient was found intoxicated and unconscious, and the probable cause of death is not stated. In the other 4 subjects the fatal diseases were such as might reasonably be supposed to have led to bleeding into the antrum by diapedesis.

The blood was due to tearing of the antral lining membrane in 2 subjects, in both of which only one cavity was involved. In one of these cases a blow had been received over the corresponding malar, and a line of fracture could be traced in the outer wall of the antrum; in the other, injury had been sustained in the region of the orbit.

The source of the bleeding in 6 subjects was extra-antral, the blood having passed from the nose into the cavity through the ordinary, or an accessory, ostium maxillare. That this was the route followed was evident in several of the cases from the presence of a track of dry blood leading from the ostium to the collection in the most dependent part of the antrum, by the presence of abundant blood in the nasal fossæ, and by the finding of blood in 3 cases also in the sphenoidal sinuses. In all the 6 subjects falling under this group both antra contained blood.

In 5 subjects the blood probably escaped by diapedesis from the vessels of the antral lining membrane. In 1, death was due to acute pneumonia, and the antral lining membrane in places was suffused with blood. In other 2 the interior of the antra presented a red mottling. In a fourth, hæmorrhage by diapedesis was suggested by the conditions found at the necropsy in other parts of the body. The inferior turbinates in the majority of these cases were either intensely red or of a dark livid hue. It might be well to mention that in opening the antra in several bodies in which there had been venous engorgement at death, the cavities rapidly filled with blood; such cases have not been included in this series.

The question as to whether fluids in the nose could enter the antrum excited considerable discussion at one time (Jelenffy, Neumann). From experiments made on dead bodies, Neumann concluded that entrance took place only when the ostium maxillare was exceptionally large, or when an accessory opening was present. The latter condition was found in only one of the above cases, and in this the blood came from the antral lining membrane. Having repeatedly observed a dried track of blood descending from the ostium to the lowest part of the antrum, I believe that fluids can easily enter this cavity from the nose, provided the head is in a favourable position, and the ostium not abnormally small. This view is supported by the frequency with which pus drains into the antrum in cases of frontal sinus suppuration. On the other hand, if the nose is suddenly filled with fluid, this will not enter the antrum unless under pressure, or when the ostium is abnormally large. Reference has been already made (see "Normal Antra containing Serous Fluid") to cases in which only a few drops of fluid were found in the antra, although the nasal cavities were full.

PUS IN THE ANTRUM.

This title does not imply the existence of a suppurative process in the antrum, but allows of the inclusion of cases in which the pus may have originated elsewhere, *e.g.*, in the frontal sinus.

Pus was found in one or both antra in 19 subjects. The following table shows the condition of the lining membrane and the cavity affected:—

Antral Lining Membrane.	Right Antrum.	Left Antrum.	Both Antra.	Total.
Normal, . . .	3	1	1	5
Thickened, . .	4	3	4	11
Polypoid, . .	1	...	...	1
Cystic, . . .	...	2	...	2

There is often an association of pathological states of the antra with abnormal conditions of the nasal fossæ. Let us consider in how far this existed in these cases. The first 5 subjects in which the antral lining membrane was normal, and in at least 2 in which the pus was of extra-antral origin, are best left out of account. In the remaining 14 the following was the intra-nasal condition:—

Normal, ...	4
Simple hypertrophic rhinitis, ...	3
Polypoid hypertrophy or polypi, ...	3
Atrophic rhinitis, ...	4

In the majority of the cases of suppuration in the antrum, inflammatory processes had been going on in the nasal cavities. It is almost impossible to determine which may have been the primary condition.

I have also attempted to estimate, roughly, the number of cases in which pus escaped by the anterior or posterior nares in sufficient amount to attract the patient's notice.

Symptoms probably present in	11
Symptoms probably absent in	4
Doubtful, ...	4

The causes of death in the 19 subjects were as follows:—

Pneumonia, . .	5	Malignant disease, .	3
Phthisis pulmonalis, .	1	Multiple abscesses in liver,	1
Chronic bronchitis, .	1	Fracture of skull, .	2
Cardiac disease, .	5	Fracture of spine, .	1

The number of cases is too small to permit of inferences being drawn as to the part, if any, these diseases played in producing the antral suppuration; pneumonia would certainly appear to be an undoubted cause.

The following are the statistics of other workers as to the frequency of pus in the antrum after death:—

Wertheim	examined	360	bodies	and found	antral	suppuration in	46	(12·6%)
Kiaer	,,	200	,,	,,	,,	,,	39	(19·5%)
Lapalle	,,	169	,,	,,	,,	,,	48	(28·4%)
Dmochowski	,,	152	,,	,,	,,	,,	12	(7·9%)
E. Fraenkel	,,	146	,,	,,	,,	affections in	54[1]	(37·0%)
Gradenigo	,,	103	,,	,,	,,	empyema in	19	(18·4%)
Kirkland	,,	100	,,	,,	,,	,,	4	(4·0%)
Minder	,,	50	,,	,,	sinusitis maxillaris in		6	(12·0%)
Kelly	,,	100	,,	,,	pus in the antrum in		19	(19·0%)

[1] Including least lesion of walls, and swellings and cysts of the mucous membrane, even if unaccompanied by suppuration.

The above percentages vary between wide limits (4 per cent and 28 per cent). E. Fraenkel does not state the number of empyemas he met with, consequently his figures cannot be made use of in this connection; but if an average be taken, it probably gives an approximately correct result, namely, 15 per cent.

CONDITION OF ANTRA CLASSIFIED ACCORDING TO THE FATAL DISEASE.

CAUSE OF DEATH.	No. of Subjects.	NORMAL ANTRAL LINING MEMBRANE.					THICKENED ANTRAL LINING MEMBRANE.				
		CONTENTS.					CONTENTS.				
		No Fluid.	Serous.	Purulent.	Blood.	Mixed or Other.	No Fluid.	Serous.	Purulent.	Blood.	Mixed or Other.
Cardiac disease, .	19	12	5	1	...	6	2	3	3	...	6
Pneumonia, . .	10	8	...	2	1	...	2	...	4	...	3
Phthisis pulmonalis, .	6	6	...	1	...	...	4	1	...	...	...
Gastric disease, .	6	5	2	...	...	...	4	...	1	...	...
Hepatic disease, .	6	1	...	...	...	3	2	1	3	...	2
Apoplexy, . .	6	5	3	...	...	...	1	1	2	...	...
Head injury, . .	8	1	...	...	5	6	1	...	...	2	1
Other diseases, . .	39	48	8	...	2	5	10	...	4	...	1
Total, . .	100	86	18	4	8	20	26	6	17	2	13

RELATION OF THE FATAL DISEASE TO THE *POST-MORTEM* CONDITION OF THE ANTRA.

An enquiry into the relation of the fatal disease to the pathological conditions found in the antrum after death must be more or less of a speculative character. This is evident when we consider that in many instances morbid processes in the antrum are independent of general disease, and clearly due to local causes. Further, even when there is reason to suspect a general rather than a local etiology, it is often impossible to deny that the antral changes may have begun prior to the onset of the last illness. It is therefore not my intention to attempt to draw definite conclusions from this part of the investigation, I shall rather indicate etiological relations that are suggested by the statistics.

Cardiac disease.—Nineteen subjects died of cardiac disease. Of the 38 antra—

12	were normal, ...		31·5 per cent.
13	contained serous fluid, . .	39 per cent.	62·0 per cent contained fluid.
2	,, ,, ,, and blood,	5 ,,	
4	,, pus,	. 13 ,,	
1	,, ,, and mucus,		
2	,, mucus, . . .	5 ,,	

The frequency of antral suppuration in subjects dying of cardiac disease has been noted to be as follows:—

Lapalle,	in 16	cases of cardiac diseases, found	5	with empyema	=31·25%
Minder,	,, 5	,, ,, ,, ,,	1	,,	=20·0%
Kelly,	,, 19	,, ,, ,, ,,	5	,,	=26·3%

Of my 19 cases of cardiac disease, in only 4 were both antra empty. In the others, either serous fluid, pus, or mucus was present. The fact that serous fluid was found in 10 subjects is striking. I have already expressed the opinion that this fluid, when scanty, may form after death in consequence of the lowering of temperature and the condensation of moisture within the antrum. When more abundant, however, transudation is probably the chief source. This view is supported by the finding of fluid in so large a proportion of cardiac cases, these being always associated in their terminal phases with general venous engorgement and other conditions favouring transudation.

Pneumonia.—Ten subjects died of pneumonia; of the 20 antra—

8 were normal, ... 40 per cent.
6 contained pus, . } . 35 per cent. } 50 per cent contained fluid.
1 ,, ,, and blood, } } . 10 ,,
1 ,, blood, . }
2 ,, yellow fluid, . . 10 ,,
2 were cystic and empty.

The following statistics show the relation of pneumonia to antral suppuration:—

Wertheim, in 16 cases of croupous pneumonia, found 6 empyemas and 5 catarrhs.
Lapalle, in 17 cases of acute pulmonary disease, found 9 subjects with empyema, ... =52·94%
Minder, in 15 cases of acute pulmonary disease, found 8 subjects with accessory cavity disease, ... =57·1%
Kelly, in 10 cases of pneumonia, found 5 subjects with empyema =50·0%
E. Fraenkel, in 20 ,, ,, ,, 10 ,, ,, acute inflammatory processes in the antra (4 presented œdema, 2 markedly injected, 6 contained recent exudation with or without œdema).

The above statistics indicate that antral suppuration is present in half of the cases of pneumonia; and yet this association is rarely enquired into when investigating the etiology of antral suppuration in a patient.

E. Fraenkel holds that the antra may become diseased in pneumonia independently of the nasal cavities, for in all the cases examined by him the latter were intact. The objection that the inflammation in the nose may have subsided is opposed by the fact that the affections were recent and must have left traces.

Phthisis pulmonalis.—Six subjects died of phthisis pulmonalis; of the 12 antra—

6 were normal, ... 50·0 per cent.
1 contained serous fluid, . . . 8·3 ,,
1 ,, pus, ... 8·3 ,,
4 had thickened lining membrane, . 33·3 ,,

The following figures show the frequency with which antral suppuration has been met with in those dying of tuberculosis:—

Lapalle, in 59 cases of tuberculosis, found 19 with antral empyema =32·2%
Minder, ,, 17 ,, ,, ,, 4 ,, ,, =23·5%
Kelly, ,, 6 ,, ,, ,, 1 ,, ,, =16·6%
E. Fraenkel, ,, 49 ,, ,, ,, 4 ,, ,, = 8·0%
Wertheim, ,, 106 ,, ,, ,, 31 with suppuration in the antrum or other accessory cavity or cavities, . . . =29·2%
Harke found antral empyema in every fourth subject dying of tuberculosis.

Statistics would seem to indicate a relation between tuberculosis and antral suppuration. The diminished resistance of the tissues, and the prevalence of pyogenic micro-organisms in phthisical subjects, probably account for the greater susceptibility of their antra to infection. The resulting suppuration, however, does not assume a special form, and is not of a tubercular nature.

Gastric disease.—Six subjects died of gastric disease (cancer in 5 cases). Of the 12 antra—

5 were normal, ...	41·6 per cent.
2 contained serous fluid, ...	16·6 ,,
4 had thickened lining membrane, .	33·3 ,,
1 ,, ,, ,, and pus,	8·3 ,,

Hepatic disease.—Six subjects died of hepatic disease. Of the 12 antra—

1 was normal, ...		8·3 per cent.
2 had thickened lining membrane, . .		16·6 ,,
4 ,, ,, ,, and pus, . . .	33·3 per cent.	75·0 ,, contained fluid.
5 contained serous or bile-like fluid or blood, . .	41·6 ,,	

The relation of hepatic disease to antral empyema has been indicated as follows:—

Lapalle, in 3 cases of hepatic disease, found 1 with empyema = 33%
Kelly, ,, 6 ,, ,, ,, ,, 3 ,, = 50%
Wertheim, ,, 10 ,, cirrhosis of the liver, found all the accessory cavities normal in only 2; an empyema of the antrum or other sinuses was present in 4.

Diseases of the liver would also appear to predispose to antral empyema, but it is difficult to see in what manner. As E. Fraenkel suggests, it is possible that the bile in the circulation excites the lining membrane of the sinus to increased secretion. An admixture of bile, however, inhibits the growth of micro-organisms, and should therefore tend to prevent the collection from becoming purulent.

Wertheim advances the view that the antral affection may originate from suppurating hæmatomata, because the tendency to hæmorrhage in those with cirrhosis of the liver favours the filling of the accessory cavities with blood.

Apoplexy.—Six subjects died of apoplexy. Of the 12 antra—

5 were normal,	41·6	per cent.
2 contained pus,	16·6	,,
4 ,, serous fluid,	33·3	,,

Lapalle,	in 19	cases of	cerebral disease,	found empyema in	5 = 26·31%
Minder,	,, 3	,,	,, ,,	,, ,,	1 = 33·0%
Wertheim,	,, 9	,,	apoplexy,	,, ,,	0
Kelly,	,, 6	,,	,,	,, ,,	2 = 33·3%

Fracture of skull and head injuries.—Eight subjects died from head injuries. Of the 16 antra—

1 was normal,	6·2	per cent.
1 had polypoid lining membrane and no fluid contents,	6·2	,,
14 contained abnormal fluids,	87·5	,,
12 ,, blood, alone or with other fluids,	75·0	,,
3 contained pus and blood,	18·7	,,
2 ,, fluids other than blood or pus,	12·5	,,

Malignant disease.—Some of the following cases have already been considered under the headings "Gastric Disease" and "Hepatic Disease." It has been thought advisable, however, to group together all the cases of malignant disease irrespective of their seat. In 14 subjects malignant disease was present. Of the 28 antra—

13 were normal,	46·4	per cent.
9 had thickened lining membrane,	32·0	,,
4 contained pus alone (2), or mixed with other fluids,	14·0	,,
2 contained fluids other than pus,	7·0	,,

The frequency of antral empyema in persons dying of malignant disease has been reported as follows:—

Lapalle, in 16 cases of cancer, chiefly stomach and intestines, found antral empyema in 5, ... = 31·25%
Minder, in 5 cases of cancer of stomach, found antral empyema in 0
Kelly, ,, 14 ,, malignant disease, ,, ,, 4 = 28·0%
Wertheim, ,, 50 ,, cancer, found suppuration in the antrum or other accessory cavities in 8, ... = 16·0%

Wertheim considers that there is no special tendency in cancer patients to inflammation of the accessory cavities. The frequency indicates rather that cachectic individuals are especially prone to infection of these sinuses. This is supported by his finding 5 empyemas in 20 cases of marasmus senilis.

The "Other Diseases" referred to in the table on p. 338 as having been the causes of death in 39 subjects, include purpura hæmorrhagica, diabetes mellitus, diphtheria, pleurisy, meningitis (2), tumour of cerebellum, hernia (3), intestinal obstruction, peritonitis, ectopic gestation, and puerperal pyæmia—in all of which both antra were normal. In the remaining 15 subjects, pathological conditions were found in one or both antra, but as these were almost as varied as the cause of death, it would be useless to consider them in detail.

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SOME NOTES ON THE TREATMENT OF TUBERCULOUS GLANDS IN THE NECK BY EXCISION.[1]

By GEO. HENRY EDINGTON, M.D., F.F.P.S.G., M.R.C.S.,
Surgeon to the Out-patient Department of the Western Infirmary and of the Royal Hospital for Sick Children; Lecturer in Surgery, Western Medical School, Glasgow.

In the majority of the cases of tuberculosis of the cervical glands which are submitted to operation early, there is no particular difficulty as to technique. In these cases the glands have not softened to any great extent, and there is no matting of the parts such as one meets with in a later stage of the affection; the glands are dissected out with more or less ease, the bleeding points ligated, the skin sutured, and a drainage-tube left in the wound for forty-eight hours. In other cases, however, the disease has progressed further, some of the glands have softened—in fact, they may be mere sacs containing tuberculous pus—and abscess and sinus may complicate the condition; there may, further, be more or less infection of the skin, with or without sinus-formation. Lastly, there may be hæmorrhage calling for plugging of the wound.

I wish to-night to draw attention to certain points connected with the operation of excision of the glands; the first of these points is—

A. Situation of the glands involved.—The incision must be planned to allow of free access to the gland or glands which it is desired to remove. We must, therefore, consider the different situations in which we meet with the enlarged glands. So far as my experience goes, the following groups are met with, in the order of their frequency:—

Group 1: Internal jugular.—Is found at the level of the extremity of the greater cornu of the hyoid bone. The glands here are situated partly under cover of the sterno-mastoid, and they also project forwards into the carotid triangle. In many cases the mass is ovoid, but in a large number it is prolonged upwards towards the angle of the jaw, or rather towards the lower part of the parotid gland; in others, again, the prolongation is downwards along the line of the vessels; and, lastly, we may have the extension in both upward and downward directions in the same case. The upward prolongation lies, for the most part, under the sterno-mastoid; its anterior part projects forwards towards the angle of the jaw. These upper glands are arranged closely round the spinal accessory nerve, and lie on the transverse processes of the upper cervical vertebræ. The mass opposite the cornu of the hyoid bone is situated at the junction of the common facial with the internal jugular vein, and it has a very intimate relation to these vessels. The prolongation downwards lies on the internal jugular vein.

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[1] Read at a meeting of the Glasgow Medico-Chirurgical Society held on 7th October, 1904.

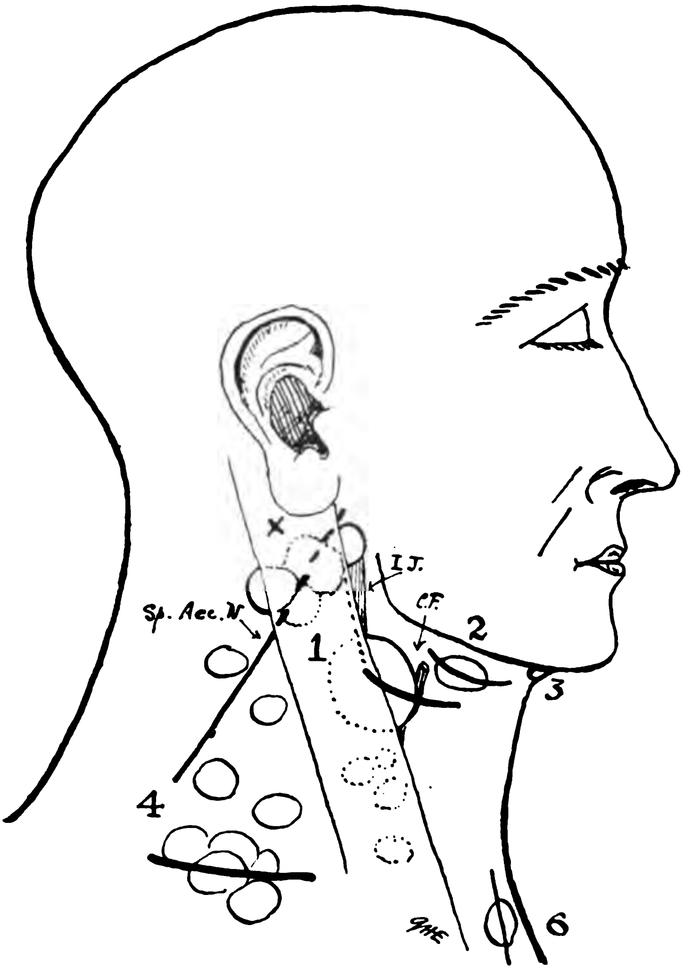
Group 2: Submaxillary.—The glands belonging to this group lie in the submaxillary or digastric triangle, and, with the exception of those placed most anteriorly, they are almost always in very close relationship to the submaxillary salivary gland. In a certain number of cases one meets with an enlarged gland lying in the lower part of the triangle; in many cases it is accompanied by others in the salivary gland, and sometimes one finds the mass entirely embedded in that gland. It is important to bear in mind the close proximity of the facial vessels, and not infrequently the operator will find it necessary to divide these vessels, and even to excise a portion along with the diseased glands. Excision of the salivary gland is rarely called for, as it can be peeled off the lymphatic glands in a surprising way. Care must be taken not to injure the hypoglossal nerve, which crosses the floor of the triangle from behind forwards, a short distance above the tendon of the digastric muscle.

Group 3: Submental.—These glands are found in the middle line of the neck, about midway between the symphysis menti and the body of the hyoid bone; but sometimes they occur low down, close to the hyoid.

Group 4: Posterior triangle.—I have generally found the glands in the lower half of the triangle, and usually associated with the descending branches of the cervical plexus and the part of the spinal accessory running to the trapezius. In this situation they are very frequently found to be discrete, although lower down it is not uncommon to find a mass of glands in the supraclavicular region.

5: Superficial.—Not infrequently a gland is found lying between the sterno-mastoid and the skin at about the level of the angle of the lower jaw.

6: Episternal.—Occasionally, in the lower part of the neck, above the episternal notch, one finds an enlarged gland. Generally, by the time the case has come under observation, the gland in this situation has broken down to form an abscess.



Numbers refer to groups of glands (see text). *Sp. Acc. N.*—spinal accessory nerve; *I. J.*—internal jugular vein; *C. F.*—common facial vein; *X*—situation of superficial gland; ***thick lines***—incisions.

B. The Incision.—In addition to giving free access to the field of operation, the incision should be so placed that the resulting scar may obtrude itself as little as possible on the notice of the bystander. For this purpose I follow, more or less, the directions given by Kocher.[1]

In Group 1, I use a transverse slightly curved incision, convexity downwards, the posterior extremity of which commences at, or a little behind, the anterior border of the sterno-mastoid muscle, and about the level of the angle of the jaw. The incision is carried downwards and forwards, crossing the middle of the mass of glands, and terminating in front over the thyro-hyoid space. The deep fascia is cut through, and, by retracting the edges of the wound in various directions, complete access to the region is gained. The outer surface of the mass is cleared, and then, by alternately working in front and behind, it is well loosened except where it lies on the jugular vein. Once the vein has been rendered visible, the task of removal is comparatively easily accomplished. The mass is pulled on by the finger and thumb or by dissecting forceps, and with careful clipping with blunt-pointed scissors can be stripped off from the vessel. The first vein which comes into view is not the jugular, although it is liable to be so mistaken by beginners; it is the common facial, and, by following it downwards, the jugular, into which it empties, is reached (see illustration).

In separating the glands from the vein, I used to employ blunt dissection with closed scissors; but I have given this up, as it is not safe. In one case in which I employed this manœuvre, the vein was torn, and, unfortunately, the patient succumbed on the table. Notwithstanding, blunt dissection is, in the superficial stages of the operation, extremely useful and speedy; for this purpose nothing can be better than the handle of the knife. Angled or curved periostal elevators I have used, but they are, as a rule, too sharp, and tend to cut into a softened gland if they come into contact with it.

The lower part of the mass may be removed entire; but, when one comes to deal with the glands around the upper part of the spinal accessory, it is well to try and separate the individual glands on the outer aspect of the group. In this way it is possible to free the nerve. On the nerve being held up with a hook, the mass of glands can be defined and separated from the subjacent muscles and cervical transverse processes. By hooking back the sterno-mastoid, the posterior glands of the group may be extirpated without it being necessary to make another wound. Sometimes the upper glands of this group are adherent to the lower part of the parotid salivary gland. The latter is very vascular, and more or less bleeding will occur in separating the gland from it.

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[1] *Text-Book of Operative Surgery*, translated by Stiles. London, 1895.

If, now, after the dissection is finished, the retractors be removed, it will be found that the edges of the wound come together, and lie in good position. One may therefore expect little or no subsequent broadening of the scar from traction.

This incision, although suitable for the large majority of cases, does not give enough room if there is a long chain of glands extending downwards on the sheath of the vessels. In such a case, one may have to resort to a vertical or oblique cut, running downwards along the anterior border of the sterno-mastoid muscle. The objection to this is that the resulting scar is much more obvious than that of the transverse wound, and there is also a tendency for traction to be exercised on the scar. This may be to some extent guarded against by suturing the platysma, but I am not quite sure that even that procedure will prevent subsequent stretching of the scar.

The glands belonging to Group 2 are best removed through a transverse incision, slightly curved, and with convexity downwards. It is a comfort to feel that in this region we do not come to close quarters with the jugular vein; we have to remember, however, the facial vessels, and frequently they will require to be isolated and ligated. Further, as the salivary gland is in most cases implicated, trouble is given by bleeding, which, coming from no very definite point, is difficult to command. Luckily, however, such hæmorrhage is not serious, and for the most part it will have ceased by the time the operation is finished.

The *submental* gland (Group 3) may be removed by a median longitudinal incision, but when, as not infrequently happens, the skin over the gland has become infected, it will be found that in most cases the involved area is oval, with its long axis transverse. In such cases, a transverse elliptical incision, embracing the affected skin, is most suitable. Such an incision gives very free access, and the scar is subsequently almost entirely hidden by the chin.

In Group 4, excision of the individual glands may be carried out through multiple small incisions. A mass of glands necessitates a larger incision; the direction of this should be transverse.

The direction of the incision for removing the *superficial* gland (5) is unimportant. If associated with enlargement of the deeper glands, the superficial one is reached by prolonging upwards the upper horn of the transverse incision described for Group 1. Episternal glands (6) are easily removed through a longitudinal incision.

Drainage will be required after removal of the jugular or the submaxillary groups. The drainage-tube may be inserted through the skin wound, but I frequently, after excision of the jugular group, introduce the tube through a stab wound made lower in the neck. In a case where there has been considerable removal backwards under the sterno-mastoid, the puncture is made in the posterior triangle and the tube brought forwards under the muscle into the large anterior cavity. The tube is removed in forty-eight hours. As a rule, in the other situations described above, the small size of cavity left by the operation obviates the necessity for drainage.

C. Soiling of the wound by tuberculous matter.—Hitherto we have been considering the case of the removal of glands without the wound having become soiled. In a certain number of cases, however, some of the glands have already broken down so much that the thin cortex of gland-tissue is ruptured during manipulation, and liquefied caseous material pours into the raw wound. This material should be carefully wiped away, and the wound washed out with an antiseptic; for this purpose I employ watery solution of carbolic acid (1 in 20). Subsequently, the cavity may be packed with iodoform gauze, and the wound left open to granulate. This minimises the chance of retention of infective material in the wound. At the same time, it entails repeated dressing and delayed healing, and, if the soiling be not extensive, one may risk a little and treat the wound by suture of the skin edges and drainage by tube, as if no soiling had occurred.

When a gland bursts and the caseous *débris* is mopped up and prevented from spreading into the wound, the latter should be protected with guaze swabs, the interior of the gland scraped out with a spoon, and the resulting cavity sterilised by the application of pure carbolic acid. The remains of the gland may then be excised. In such a case, one may usually stitch the wound.

If the wound is packed and left to heal by granulation, it is surprising to find what a seemly scar will result. From experience of these cases, I know that the scar is very little more apparent than that left by a closely-stitched wound which has healed by first intention. It is important that this should be borne in mind, because in cases where it is very difficult or impossible to control hæmorrhage by ligature, this method is most valuable.

D. Extensive involvement of skin, with or without sinus.—In some cases, with or without the presence of a sinus, there is such an extensive involvement of the skin over the diseased glands that, after the affected portion of the integument has been cut away, the edges of the wound cannot be brought together. In such an event, treatment by packing and leaving the wound gaping will be found to give a much better cosmetic result than one would have expected.

Further, if for any reason the cavity under a closely-stitched wound should become septic, the happiest result will follow the removal of the stitches, the evacuation of the pus, and the insertion of light packing—always provided, of course, that the constitutional affection is not fatal.

In conclusion, the object of these brief notes is to emphasise the suitability of the transverse incision in the removal of glands from the anterior triangle. The suitability of such an incision depends on two grounds—(1) It gives free access to the glands in the large majority of cases; and (2), if required, it may be left open with the certainty of a good cosmetic result.

Obituary.

JAMES BURN RUSSELL, M.D., LL.D.

THE announcement of Dr. Russell's death in Edinburgh on the 22nd ult., has caused widespread sorrow here in his native city, for which he worked so earnestly, and of which, for so many years, he was a distinguished ornament. His death caused little surprise among his intimate professional friends, as for several months no other end seemed possible to his long illness, although, up till quite lately, he was able to do his official work in his own house.

Before going to press, we have only time to make this short announcement, and we propose to give a detailed account of his life-work in our next number. As the first editor of this series of the *Glasgow Medical Journal*, when it was resuscitated in 1868, it is proper that such details should appear in these pages.

JAMES WALLACE, M.A., M.D., F.F.P.S.G., GREENOCK.

It is with regret that we have to record the death, in his seventy-ninth year, of Dr. James Wallace, who passed away at his house in Greenock on the 10th of last month. The deceased, who was born in Edinburgh, was regarded as the veteran practitioner of the town of his adoption, where he had lived and practised for much longer than the average span. Dr. Wallace graduated in Arts in the University of Glasgow in 1845, and five years later he took the degree of M.D. In 1855 he became a Fellow of the Faculty of Physicians and Surgeons. He commenced practice in Greenock in 1850, and he continued in the active work of his profession till his death—a period of fifty-four years. He held several public appointments, being Medical Officer of Health, and Visiting Medical Officer to the Smithston Asylum; he had also served as physician in the Greenock Infirmary, of which he had been house-surgeon from 1846 to 1848. He was closely associated with Glasgow, having, while a senior student, been house-surgeon to the Royal Infirmary (1848-50). Later, he became known to many of the students from his acting as examiner in surgery and clinical surgery in the University. At social meetings he was in great request on account of his geniality, and also of his singing powers. His loss will be felt not only in Greenock, but in the West of Scotland.

Dr. Thomas, the late superintendent of the Royal Infirmary, writes:—

"My acquaintance with the late Dr. Wallace began with my appointment to the post of house-surgeon in the Greenock Infirmary in the year 1855. This appointment virtually lay with him owing to the active interest he took in all that concerned the infirmary; and as he himself had been house-surgeon at one time, and had also been for nearly two years one of the clerks (as the house-surgeons were then called) in the Glasgow Royal Infirmary, the managers relied on his judgment, and gave the appointment to the candidate he approved. I soon found that he was a master in the profession, and as he was always willing to aid and to instruct, the year I spent with him was most profitable to me. He was minute and painstaking in the examination of his patients, requiring full reports of their condition on admission to be inserted in the journal by the house-surgeon. These were read to him at his next visit, and after verifying or correcting them for himself, he dictated in clear and concise language further reports and the details of treatment, all of which had to be duly entered. This practice was a splendid training for the house-surgeon, as it showed him how to carry out his work with method.

"Dr. Wallace excelled as a surgeon. He preferred surgery, and had already contributed papers on it to the medical journals. His contribution on the treatment of stricture of the urethra had drawn a warm letter of approval to him from Mr. Syme. But he was not less eminent as a physician, and he was an authority on fevers. An epidemic of typhus and typhoid fever breaking out in Greenock and Port-Glasgow, he thoughtfully brought to me, from the library of the Faculty, *Graves on the Treatment of Typhus*, a book which I found of inestimable value.

"He was always anxious to have *post-mortems*, and from what we then obtained I should think he must have left a collection of valuable and rare morbid specimens. He usually made two visits daily to see his patients, especially after he had performed an operation. It was a pleasure to me when he made a night visit, as after it he came into the dispensary and entertained me with stories of his residence in the Glasgow Royal Infirmary, of the staff, and of James Brown, the janitor, who was a character. His stories were always amusing, and never ill-natured. He also talked on other subjects, and was an admirer of Carlyle and his philosophy. He used to relate with pleasure a discussion he had on the philosophy of Kant with Herr Carl Formes, the celebrated basso, who was then in the zenith of his fame, and he was much impressed with the intellectual attainments of the great singer. Dr. Wallace himself was said to possess a beautiful tenor voice, but I never heard him sing until three years ago, when he presided at the annual dinner of the past and present residents of the Royal Infirmary. Though well over the three score years and ten, his voice was steady, fresh, and silvery—a cultured voice—and he was enthusiastically applauded and encored.

"He had an active, nervous, intellectual temperament, was somewhat sharp and impatient, but this left him as years rolled on, and gave place to a geniality which made him loved by all who knew him. His abilities and worth were recognised by his fellow townsmen and by the members of the profession who came from all quarters to Greenock on the occasion of his jubilee.

"Before settling, he informed me that, on the advice of the late Dr. J. G. Fleming, he thought of beginning practice in Glasgow; both searched the Anderston district for a likely spot, but not seeing one suitable, he finally began practice in Greenock. Glasgow thus lost the services of one who would have taken a prominent position in the profession like his fellow students Professor J. B. Cowan, George Buchanan, Sir G. H. B. Macleod, and others.

"Dr. Wallace had a strong personality, and it was a pleasure to have the friendship of such a man.

"It may be worth while to mention that during all the time I knew him, Dr. Wallace was a total abstainer and a non-smoker."

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

Archibald Aitchison (C)
David Anderson (C)
James George Anderson (B, P)
William Anderson (Z, C)
Thomas Archibald (B, P)
William Hunter Stirling Armstrong (B, Z)
Alexander Ballantyne (B, Z, C)
William Barr (B, P, C)
Charles Bennett (B, P)
Robert Rankin Bow (Z, C)
Charles Brash (Z, C)
William Barrie Brownlie (B, P)
David Young Buchanan (B, P, C)
John Adam Gib Burton (B)
Hector Mackay Calder (B, Z, C)
John Cameron (C)
Donald James Clark (B, P, C)
James Lang Cochrane (B)
Alexander Johnston Couper (C)
Rutherford Cramb (B)
John Cruickshank (B, P)
James Cowie Dick (C)
Charles Duguid (B)
William Hunter Duncan (Z)
Philip Figdor (B)
Robert Dunlop Black Frew (B, Z)
David Gibson (B)
Alexander Gordon Gilchrist (B, P)
Walter Gilmour (B, P)
George Stevenson Gordon (B, P)
Hugh MacVicar Gossman (C)
Edward O'Driscoll Graham (B, C)
John Granger (B, P)
George Haddow (B)
William Hamilton (P, C)
Michael Harkin (B, Z, P, C)
John Primrose Hay (B, Z)
John M'Lean Hendry (B, Z)
Stephen John Henry (B, P)
James Hall Hislop (C)
William Alexander Hislop (B)
Colin Hunter (B)
Cochran Johnston (B, Z)
Walter Hermann Kiep (B, Z, P, C)
John Parlane Kinloch (B)
David Neilson Knox (B, P)
John Lang (B, P)
George Smith Livingstone (Z)
William Charles Macartney (B)
Frank Crombie Macaulay (B, P)
Robert M'Carlie (B)
William M'Connell (B, P)
Donald M'Dougall (B, Z)
Neil MacInnes, M.A. (C)
William M'Kendrick (B, Z)
Francis William Mackichan (Z, C)
Thomas Mackinlay (B, P)
Alexander M'Kinnon (B, P)
John James Mackintosh (B, Z)
John MacMillan (Z, C)
Peter Russell M'Naught (B, P)

John William M'Nee (B, P)
Murdo MacPhail (B, Z, C)
Thomas Marlin (B, P)
William Aubrey Layard Marriott (B)
Frank Needham Marsh (B, P)
David Rogerson Mathieson (B)
Donald Meek (B, Z)
William Spence Melville (B)
Kenneth Chisholm Middlemiss (B, P)
Robert Stewart Miller (P)
John Mowat (B, Z)
William Aikman Muir (B, C)
Charles Sutherland M'Kay Murison (Z)
Charles Allison Murray (B)
Watson Noble (B, P)
Bernhardt Papiermeister (B, Z)
Albert Rutherford Paterson (B, P)
Adam Patrick, M.A. (C)
Murray Purvis (B, P)
Edward Quigley (B, C)
Richard Rae (C)
Henry Nimmo Rankin (B, Z, P, C)
Nicol M'Nicoll Rankin (P, C)
John Robertson (Z)
Robert Charles Robertson (B, P)
Alfred Roemmele (B, P)
William Wilson Rorke (B, P)
William Rutherford (B, P)
Robert Ephraim Selby (C)
William Alexander Sewell (B, P)
James Brown Sim (B, C)
James Johnston Sinclair (B)
James Stewart Somerville (B)
Alexander Stewart (B)
Donald Stewart (B, Z)
Edward Ernest Stewart (B, P, C)
Robert Wilson Sutherland (B, P)
David Taylor (B, P)
Duncan Macnab Taylor (B, P)
David Alexander Thomson, M.A. (Z, P)
John Shedden Thomson (B, P)
Arthur Turnbull (B, C)
Robert M'Nair Walker (B, P)
William Samuel Waterhouse (B)
Tom Paul Watson (Z, C)
Harold Wellwood (Z, C)
James Brown Whitfield (B, P)
William Crowley Whittingham (B, P)
Charles Percival Williamson (C)
John Alexander Wilson (B, P)
Henry Joseph Windsor (B, P)
Hugh Young (Z, C)
John Young (Z, C)

WOMEN.

Mabel Foley (B, Z)
Euphemia Adamson Hay (B, Z)
Ella Smith Hill, M.A. (B, Z)
Jeanie Walker Jones (B, Z)
Honoria Somerville Keer (B, Z)
Janet Annie Macvea (B)
Mary Cochran Mitchell (B, Z)
Flora Morrison (C)
Jessie Deans Rankin (B, Z, C)
Olive Robertson (C)
Winifred Margaret Ross (B, Z, C)
Jessie Capie Russell (B, Z)
Margaret Elizabeth Rutherfurd (P)
Jemima Wallace (B)
Ethelwyn Mary Walters (B, Z)

The following have passed the second professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

James Montgomery Anderson (A, P)
John Anderson, M.A., B.Sc. (A, P, M)
Thomas Barbour, B.Sc. (M)
William Rome Cammock (A, P, M)
George Campbell (A, P, M)
John Sawers Clark, M.A. (M)
Thomas Lawson Craig (M)
Robert Donald (A, P, M)
James Richan Drever, M.A. (A, P, M)
Richard John Driscoll (P)
James Dunbar (P)
Ernest Milne Eaton (M)
William Miller Fairlie (P)
John Ferguson (A, P, M)
Thomas Henderson Forrest (A)
James Wilfred Georgeson (A, M)
William Gilfillan (A, P, M)
Arnold Harris Gray (M)
William Towers Hardie (P, M)
Lawrence Hislop (A)
John Keys (M)
James Dunlop Kidd (M)
James Towers Kirkland (A)
Robert Wright Leckie (M)
George Ligertwood (P)
Ernest Bowman Macaulay (A)

Alexander M'Call (A, M)
Thomas M'Cririck, M.A., B.Sc. (A, P)
William Anderson M'Kellar (A, P)
Murdo Duncan Mackenzie (A, P)
Alister Argyle Campbell M'Neill (M)
Robert Marshall (M)
Allan Frederick Miller (A)
James Robertson Mitchell (A, P, M)
Peter Mitchell, M.A. (M)
Robert Wright Mitchell (P)
James Hogg Paul (M)
Arthur Geoghegan Paxton (A)
Daniel M'Kinley Reid (P, M)
Murdoch Mann Rodger (P)
Alfred Cecil Sharp (M)
James Charles Donaldson Simpson (A)
James John Sinclair (M)
William Smellie (M)
John Stevenson (M)
John Torrance Weir Stewart (P)
Robert Todd (A, P)
Martin Turnbull (A)
George Wallace (A)
Hugh Ferguson Watson (P)
Hugh White (A, P)
David John Williams (A, P)
Thomas Winning, M.A. (P)
Moses Youdelevitz (M)

WOMEN.

Jeannie Montgomery Andrew (M)
Annie Rennie Hird (P)
Katherine Robina Margaret Lucas (M)
Edith Oversby (A)
Vera Dagmar Reis (M)
Margaret Baillie Taylor (A)

The following have passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

Andrew Blair Aitken (M)
George Allison Allan (M)
Andrew Woodroffe Anderson (P)
John Bain, M.A. (P, M)
George Thomson Bogle (M)
Charles Burns (P)
John Miller Hopkins Caldwell (P)
Donald Livingstone Carmichael (M)
Charles Game Angus Chislett (P)
John Shaw Dunn, M.A. (M)
William Gilchrist (P, M)
John Isdale Greig, M.A., B.Sc. (P, M)
William Grier (M)
John Hammond (P)
Charles Francis Dyer Hammond (P)
James Duncan Hart (M)
Frank Hauxwell (M)
Robert M'Cowan Hill (M)
Ralph Vincent Howell (P)
Alexander Hunter (P)
David Guthrie Hunter, M.A. (P, M)
James Hunter (M)
Archibald Yuill Hutchison (M)
Harry Stewart Hutchison, B.Sc. (P, M)
Arnold Ernest Jones (P, M)
George Notman Kirkwood (M)
Alexander Leggat (P, M)
Thomas M'Cosh (M)
Duncan M'Ewan (M)
John Macintyre (P)
William MacLeod (M)
John M'Millan (P, M)
Hugh MacNaught (M)
Norman Smith M'Naughtan (M)
Richard Cameron Macpherson (P, M)
William Blair Morton Martin (P, M)
Robert May (P, M)
Henry Joseph Milligan (P)
Gavin Denholme Muir (P)
John Dunn Nisbet (P)
Patrick Joseph O'Hare (M)
Thomas Hood Rankin (P)
Thomas Thomson Rankin (M)
John Reid (P)
William Rolland (M)
John Cooper Russell, M.A. (P, M)
Edward Louis Augustin Sieger (P)
Arthur Anderson Stewart (M)
Daniel Stewart (P, M)
John Logan Stewart, M.A. (P, M)
Joseph Roderick Sutherland (P, M)
Thomas Thom (M)
William Lind Walker, M.A. (M)
Alexander MacMillan Watson (P)
James Wyper (M)

WOMEN.

Jeannie Thomson Clark (M)
Elizabeth Maud M'Vail (M)
Jessie Deans Rankin, M.A., B.Sc. (M)
Jane Reid Shaw (P)
Mary Spence (P)
Christina Gibson Thomlinson (M)

The following candidates passed with distinction in the subjects indicated:—

First Examination.—In Botany and Physics: John Cruickshank, Peter Russell M'Naught, Albert Rutherford Paterson. *In Zoology and Physics:* David Alexander Thomson, M.A. *In Zoology and Chemistry:* Robert Rankin Bow. *In Botany:* David Young Buchanan, Frank Crombie Macaulay, Frank Needham Marsh. *In Zoology:* William Anderson, William M'Kendrick. *In Physics:* Walter Gilmour, John Willlam M'Nee, William Wilson Rorke. *In Chemistry:* Walter Hermann Kiep, William Aikman Muir, John Young.

Second Examination.—In Physiology: John Anderson, M.A., B.Sc. *In Materia Medica and Therapeutics:* Peter Mitchell, M.A.

Third Examination.—In Pathology and Medical Jurisprudence and Public Health: William Blair Morton Martin. *In Medical Jurisprudence and Public Health:* Elizabeth Maud M'Vail.

GLASGOW OPHTHALMIC INSTITUTION: POSTGRADUATE INSTRUCTION IN OPHTHALMOLOGY.—The reader will find in our advertising pages particulars of the course of lectures and demonstrations for the forthcoming session. Patients, specimens, instruments, &c., are exhibited each Tuesday evening at 8 o'clock, and the formal demonstration begins half an hour later. The first meeting of the course takes place on 1st November.

THE following are the office-bearers for session 1904-1905 of the various medical societies of Glasgow:—

MEDICO-CHIRURGICAL SOCIETY.

President,	DR. D. NEWMAN.
Vice-Presidents,	DR. R. M. BUCHANAN. DR. J. H. NICOLL.

Council.

Section of Medicine.	*Section of Pathology.*
DR. ROBERT M'KINLAY.	DR. A. A. GRAY.
DR. DONALD MACKINTOSH.	PROFESSOR MUIR.
DR. J. M. COWAN.	DR. JOSHUA FERGUSON.
DR. NORMAN M'NAIR.	DR. JAMES SCOTT.
Section of Surgery.	*Section of Obstetrics.*
DR. GIBB.	DR. A. N. M'LELLAN.
DR. PETER PATERSON.	DR. P. M'BRYDE.
DR. G. BURNSIDE BUCHANAN.	DR. DAVID WATSON.
DR. ALFRED YOUNG.	DR. ROBERT JARDINE.

Treasurer,	DR. BARCLAY NESS.
Editorial Secretary,	DR. HUGH M'LAREN.
General Secretary,	DR. W. K. HUNTER.

PATHOLOGICAL AND CLINICAL SOCIETY.

President,	Professor Robert Muir.
Vice-President,	Dr. J. Lindsay Steven.
Hon. Treasurer,	Dr. Henry Rutherfurd.
Hon. Editorial Secretary,	Dr. John H. Teacher.
Hon. Secretary,	Dr. J. W. Findlay.
Assistant Hon. Secretary,	Dr. M. Logan Taylor.

Members of Committee.

Dr. Joshua Ferguson.
Dr. James Carslaw.
Dr. L. R. Oswald.
Dr. J. Wyllie Nicol.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Hon. President,	Dr. C. J. Cullingworth, London.
President,	Dr. J. K. Kelly.
Vice-Presidents,	Dr. Andrew Richmond. Dr. John Lindsay.
Treasurer,	Dr. G. N. Turner.
Secretary,	Dr. G. Balfour Marshall.
Editor of "Transactions,"	Dr. A. N. M'Lellan.
Reporting Secretary,	Dr. A. Louise M'Ilroy.
Pathologist,	Dr. John H. Teacher.
Past President,	Dr. J. Nigel Stark.

Additional Members of Council.

Dr. Samuel Alexander.
Dr. R. O. Adamson.
Dr. Campbell Syme.
Dr. David Watson.
Dr. W. L. Reid.
Dr. William Ritchie.

SOUTHERN MEDICAL SOCIETY.

Hon. President,	Professor H. E. Clark, C.M.G.
President,	Dr. James Hamilton.
Vice-Presidents,	Professor Stockman. Professor T. K. Monro.
Treasurer,	Dr. Thomas Forrest.
Secretary,	Dr. James Weir.
Editorial Secretary,	Dr. R. W. Forrest.
Seal Keeper,	Dr. Andrew Wauchope.

Extra Members of Council.

Dr. J. Stewart. | Dr. D. MacGilvray. | Dr. R. J. Carroll.

Court Medical.

Dr. Thomas Richmond.
Dr. J. C. A. Smith.
Dr. Geo. H. Edington.
Dr. A. Roxburgh.
Dr. John Brown.

Governor of the Victoria Infirmary—Dr. C. E. Robertson.

EASTERN MEDICAL SOCIETY.

President,	Dr. James Dunlop.
Vice-President,	Dr. Miller Semple.
Secretary,	Dr. P. S. Buchanan.
Treasurer,	Dr. J. Wilson Mathie.
Reporting Secretary,	Dr. Hugh H. Borland.
Seal Keeper,	Dr. Thomas Russell.

Council.

Dr. Joseph Green.	Dr. John Anderson.
Dr. John A. C. Macewen.	Dr. W. Adam Burns.
Dr. A. Laurie Watson.	Dr. John W. Findlay.

Auditors—Dr. Robert Wilson and Dr. T. C. Barras.

NORTHERN MEDICAL SOCIETY.

President,	Dr. J. Galbraith Connal.
Vice-Presidents,	Dr. John G. Gray. Dr. Ritchie.
Treasurer,	Dr. James Todd.
Secretary,	Dr. Malcolm Campbell.
Reporting Secretary,	Dr. Scott Frew.
Seal Keeper,	Dr. Baird.

Auditors—Dr. Dinwoodie and Dr. Spinks.

Ordinary Members of Council.

Dr. James B. Miller.	Dr. John A. C. Macewen.
Dr. Malcolm Black.	Dr. P. M'Bryde.
Dr. Robert G. Inglis.	Dr. Ballantyne.
Dr. Campbell S. Marshall.	Dr. James W. Allan.
Dr. J. Steel Muir.	Dr. Edmiston.
Dr. John Donald.	Dr. A. T. Campbell.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1903-1904.

Meeting XI.—18th March, 1904.

The President, Dr. David Newman, *in the Chair.*

I.—THREE CASES OF LUPUS IN WHICH THE LIGHT TREATMENT FAILED: SUBSEQUENTLY TREATED BY TUBERCULIN.

By Prof. T. M'Call Anderson.

Case I.—E. K., æt. 14, was admitted to the Western Infirmary on 1st December, 1903.

Condition on admission.—The nose is seen to be enlarged, and the tip is covered with a flat yellowish-green crust. The alæ nasi and most of the external surface of the nose show a raised red glazed skin, ending somewhat abruptly in the healthy surrounding tissue. There is some irritation and abrasion of the skin of the upper lip around the nostrils. The condition is one of extensive lupoid affection of the skin of the nose and upper lip. There is also extensive antero-nasal alteration of the same nature. The cartilage of the septum is perforated, and the inferior meatus is completely filled with granulation tissue.

History of illness.—About six years ago, on recovering from a cold, he noticed that his nose remained blocked, causing difficulty of breathing, but no pain. From time to time, yellowish crusts came away, giving him some relief. Eighteen months later, the tip of his nose became red and glazed, and this appearance slowly spread over the greater part of it. Nine months before admission, the tip of the nose ulcerated and a crust formed over it, and about this time the lip became affected.

Treatment.—During the first two years the affection was treated with ointments and lotions, and it was scraped and cauterised in Kilmarnock Infirmary.

Electrical treatment.—In August, 1903, the Finsen light treatment was begun with five minutes' exposure with ten ampères of current. The exposure was gradually increased to twenty minutes, and the current to twelve ampères. This treatment was continued until admission to hospital. After admission to hospital tuberculin treatment was commenced, and now the affection is entirely healed, except for a suspicious soft spot at the tip of the nose. The treatment is still being continued.

This patient made a perfect recovery.

CASE II.—C. M'C., æt. 14, was admitted to the Western Infirmary on 15th March, 1904.

Condition on admission.—The central portion of the free margin of the right ala nasi is eroded, and the remainder is cicatrised, excepting posteriorly, where it is thickened and red. The inferior meatus on the right side is almost occluded with granulation tissue and crusts. The lower half of the nose in front and on the left side is thickened, raised and red, and covered with fine scales, and the margin is fairly well defined. The entire left ala nasi is ulcerated, and covered with a greenish brown crust. This ulceration extends forwards to the nose as a broad strip—the whole of the free border being ragged and eroded. The inferior meatus on this side is also partially occluded. The central portion of the upper lip is also ulcerated, and there are two ulcers on the left arm.

History of illness.—The eruption began about two and a half years before admission. A small raised spot appeared on left fore-arm. This ulcerated, and a crust formed. A week or two later a spot, similar to the first, appeared about one inch farther up the arm, and followed a similar course. The surrounding skin has gradually become thickened and reddened, and slightly scaly. Shortly after the appearance of the eruption on the arm he noticed a small scab on the right side of the nose. The scab, when removed, quickly reappeared. The skin around the ulcer became red, dry, and scaly. The right side of the nose slowly became thickened and covered with a greenish crust, and the margin became eroded. When 7 years of age, the patient suffered from disease of the left tibia, which was probably tubercular. He had a brother who died from tubercular disease of the spine.

Electrical treatment.—On 6th November, 1902, *x*-ray treatment was commenced and continued daily for ten minutes until 20th December, 1902, but the disease gradually extended.

Dr. Anderson intends to put this patient on tuberculin treatment, and he is sure that the condition will be improved.

This patient also made a perfect recovery.

CASE III.—R. R., æt. 21, was admitted to the Western Infirmary on 24th November, 1903.

Condition on admission.—A linear-shaped scar is seen on left side of face. On the right side of the face there is a large patch implicating the lower and posterior part of the pinna, and extending across the cheek to the molar prominence (the anterior border runs vertically downwards from here to the lower jaw, and the inferior and posterior borders follow the line of the inferior ramus). The patch is dull red in colour, raised, thickened and nodular, especially along the borders. There is a large nodule below the ear, one in the middle of the patch, and a third at the inferior border. There are many thick greenish-black crusts covering the greater part of this area.

History of illness.—Eruption commenced on both sides of the face, eleven and a half years before admission to hospital, as a small soft brownish-red nodule, with reddened skin surrounding it. These nodules increased in size, and burst. Yellowish crusts formed over them, and the surrounding skin was thickened, glazed, and red. The disease progressed very slowly, and on the left side, after coming to a standstill, it began to improve. On the right side it has gone on increasing.

Electrical treatment.—Treatment was commenced on 27th February, 1903. Until 3rd April, 1903, he had almost daily exposures to the Finsen light, varying in duration from ten to twenty minutes at each sitting, and a current of from ten to twelve ampères. On 3rd April, the high-frequency current with brush discharge was commenced, ten minutes at each sitting, and continued daily until 29th November, 1903. In spite of this, there was no improvement.

The patient is now being treated with tuberculin.

(This patient was improving rapidly, but decamped suddenly before the treatment was completed.)

Dr. Renton said he had treated several cases with tuberculin, and all improved. The tuberculin treatment must be continued until the disease is eradicated. He had a case of lupus which was treated with *x*-rays and Finsen light for one year without improvement. After being scraped and cauterised, it healed, but relapsed. Tuberculin was tried, and within a month improvement was marked, and improvement still continues.

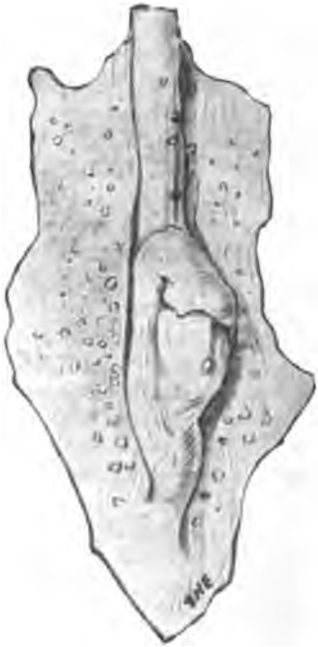
Dr. Newman said his experience in connection with the light treatment was most unsatisfactory. He still practised scraping and the application of acid nitrate of mercury, and his results were almost perfect. He had a patient who had the light treatment for six months without improvement. The affected part was scraped, and acid nitrate of mercury applied, and the wound healed within fourteen days.

Dr. Anderson replied.

II.—IMPERFECTLY DESCENDED TESTICLE, WITH TUBERCULOSIS OF PROCESSUS VAGINALIS.

By Dr. Geo. H. Edington.

Hugh M'L., aged 12, was sent to me by Dr. J. Wainman Findlay, on account of swelling in the right inguinal canal in connection with imperfect descent of the testicle on that side.



Processus vaginalis opened and pinned out, and specimen hardened in formalin. Testicle viewed from outer side.

He had always been a healthy boy, and played and ran about in a most active fashion. About a month previous to his being taken to Dr. Findlay his parents had observed a "lump" in the right groin, but he had never complained of any pain in this region.

On examining him, the left testicle was in the scrotum, but the right had not descended. There was some fulness in the region of the right inguinal canal, and distinct tendency to hernia. On putting him into the recumbent posture, the right testicle was found to be distinctly movable, and in the inguinal canal, about the external ring. A gap was palpable in the region of the canal as if the internal oblique muscle were highly arched. On his coughing, a gurgling was felt at in the internal ring.

Operation on the hernial sac was advised, with permission to remove the testicle if it could not be brought down into the scrotum. On 13th August, 1903, the canal was opened and the testicle exposed; the tunica protruded for some distance from the external ring. The processus was widely open, and could not be separated from the elements of the cord. Both structures were ligatured high up and cut away. The canal was closed by Bassini's method. The peritoneal surface of the processus high up was studded with minute white specks, smaller than the head of a pin. In the lower part, corresponding to the tunica, the specks were larger and more prominent. The testicle was well formed, and fixed by the epididymis to the back of the processus. The globus minor was prolonged downwards for some distance beyond the body of the testis, and the cord projected as a marked ridge in the upper part of the processus. Dr. Walker examined the specimen microscopically, and found the white specks to be tubercles. The fixation, however, prevented him making a satisfactory examination of the tubules and interstitial tissue of the gland. The measurements of the specimen were as follows:—Testis, antero-posteriorly, 1·25 cm.; vertically, 1·5 cm. Epididymis extended 1·5 cm. beyond lower pole of testis, and the processus vaginalis a similar distance beyond the epididymis. No note was made as to presence or condition of gubernaculum or other bands, nor was the state of development of the scrotum observed. It is very unlikely that there was no tuberculosis of the general peritoneum, but repeated examination of the abdomen failed to show any signs of such.

III.—STRANGULATION OF TESTICLE FROM TORSION OF A PEDUNCULATED MESORCHIUM.

By Dr. Geo. H. Edington.

This specimen was removed from a patient, aged 7 months, who came to the Children's Hospital Dispensary in September, 1903, with great swelling and redness of left side of the scrotum. It had been observed the preceding day. There were no constitutional symptoms. The signs resembled those of acute orchitis. Incision to relieve tension exposed strangulated testicle. The strangulation was due to a complete twist outwards of a pedunculated mesorchium, by which the testis and epididymis were suspended in the tunica vaginalis. Recovery was uneventful.

[Fully reported in *Lancet*, June, 1904.]

IV.—MULTIPLE MALFORMATIONS, UNILATERAL, FROM A CASE OF ATRESIA ANI.

By Dr. Geo. H. Edington.

The patient was operated on for atresia ani on the second day, and died on the sixteenth day. There was no anus, and the bowel was near the surface. There was right-sided harelip, abnormal approximation of first to second metacarpal bones of right hand, and prominence of upper costal cartilages on right side.

On *post-mortem* examination, there was found to be absence of right kidney, with left kidney normally placed. The single ureter was distended with urine from narrowing at lower end of tube, and there was slight hydronephrosis. The right vas deferens did not reach the region of the trigone, and the corresponding testicle was smaller than its fellow. The ribs on the right side were in places fused together, and there was lateral curvature of the spine in cervical and upper dorsal regions, with concavity to right.

[Fully reported in *Journal of Anatomy and Physiology*, July, 1904.]

V.—CASE OF CONGENITAL WORD-BLINDNESS.

By Dr. James Hinshelwood.

This case was the fifth reported by Dr. Hinshelwood since his original article on the subject in the *Lancet*, 1900, where the whole subject of congenital word-blindness is discussed in detail.

The present case was an admirable example. The patient was a boy who, in every other respect being very intelligent, had experienced the greatest difficulty in learning to read. After being seven years at school, he was only in Standard II, and could not get out of it because of his reading. He made excellent progress with his arithmetic, his spelling, his geography and history, and in all branches of study other than learning to read. The mental defect was a purely localised one, and only affected the special area for the visual memory of words and letters, which is situated in the angular gyrus on the left side of the brain. The points in the diagnosis of these cases were fully discussed, and Dr. Hinshelwood maintained that such cases were comparatively common, although their true nature was not suspected. Under a proper system of training, most of these patients could be taught to read, and the present case made excellent progress when the child's education was conducted in the proper way. Hence it is of great importance that such cases should be recognised at an early stage, in order that the children may be properly trained.

[The paper is published in full in the October number of *The Ophthalmoscope.*]

MEETING XII.—1ST APRIL, 1904.

The Vice-President, DR. H. RUTHERFURD, *in the Chair.*

I.—ANKYLOSTOMIASIS.

BY DR. GEORGE BELL TODD.

I. *Introductory.*—The disease known as ankylostomiasis or "miners' anæmia" is produced by a nematode or round-worm, ankylostoma duodenale, also called the dochmius duodenalis or strongylus duodenalis, infesting the small intestine, to the mucous membrane of which it attaches itself by a series of hooklets (four to six in number, according to the reports of different observers) situated around the mouth of the parasite.

The adult male worm is about a quarter to a third of an inch (6-8 millimetres) in length, the female being somewhat larger, longer (about 12 millimetres or half an inch), and thicker.

The sexual organs of the male are situated at the posterior extremity, and are surrounded by a characteristic bursa (= purse-like enlargement); whilst those of the female are placed a little to the rear of the middle of the body.

The female lays a large number of microscopically small, highly transparent, oval eggs about ·03 to ·04 millimetre wide and ·05 to ·06 millimetre long, which pass away in the fæces.

On issuing from the body, the ova are usually in an advanced state of segmentation, and usually contain from two to eight divisions of the nucleus; so that, given favourable conditions for development, they quickly hatch out into larvæ.

The essential conditions for this development are a very moist, pasty medium, a temperature exceeding 20° C. (68° F.), the most favourable being 25° to 30° C. (78° to 86° F.), and the absence of sunlight.

The larvæ, on issuing from the ova, are very active so long as the medium remains moist, but after a short time develop a distinct integument or capsule—in fact, become encysted—and thus attain their final stage of existence outside the human body.

Looss, a German observer, maintains that the capsuled or encysted larvæ readily pass into the skin, and produce a temporary skin eruption. He even suggests that they may finally gain access to the intestine in this way, though this view is not upheld by other authorities, especially that of Dr. Hugo Bruns, of Gelsenkirchen, Westphalia.

Owing to carelessness, or perhaps also the absence of proper accommodation, the miners deposit their fæces in the underground workings, where the fæcal matter becomes incorporated with the sludge. This, in the course of the ordinary operations of mining, gets on to the men's hands and bodies, and may enter the mouth with the food. The encysted form of the larvæ alone seems to be capable of transmitting the disease, and attain complete development into the adult male and female worm on reaching its natural habitat.

Oxygen being essential to the development of the ova, and that outside of the body—it is worthy to note as a biological fact that it is impossible for the complete cycle of reproduction to proceed within the intestine.

With regard to the question whether the worm can be carried by any other animal than man, it was believed at one time that both dogs and horses were capable of harbouring the parasite; but all the investigations made on this point gave negative results. On the other hand, ova, producing larvæ similar to those of ankylostoma, have been found by Dr. Hugo Bruns, of Gelsenkirchen, in the digesta of two monkeys on which he intended to experiment in this direction, but the absolute identity of the two species has not yet been determined.

The life of the worm extends over several years, a fact which recently received confirmation in the case of several reservists in the German army who, after two years' service with the colours, have been found suffering from ankylostomiasis on their return to pit work. Although the disease is common in tropical and subtropical climates, it is confined in the temperate zones to workers in mines, tunnels, and brickworks. So far as miners are concerned, it affects only those actually working underground, the few cases observed in Germany of men working at the surface having been traced to their previous employment in the pit.

Fear has been expressed that the malady might be communicated to the families of the affected men, but the instances in which such transference has been confirmed are relatively insignificant.

One recorded case in Germany is that of a miner's son, aged 9, who was in the habit of cleaning his father's dirty boots on Saturday, the latter taking his working clothes home at the end of the week to be washed; and two or three similar instances occurred at Anzin, the infection having no doubt been communicated in much the same way, so that practically the disease is limited and restricted to actual workers underground.

Two mining engineers in Belgium have contracted the disease, but this circumstance is attributed to their constant occupation in infected pits.

II. *Symptoms.*—The symptoms of ankylostomiasis are those of an anæmic condition of the blood, externally the lips, the tongue, gums, and the inner surfaces of the eyelids (conjunctivæ), as well as the face, becoming pale. These symptoms are accompanied by the usual concomitants of anæmia—palpitation, dizziness, and shortness of breath on exertion; the appetite is affected, and other symptoms of gastro-intestinal disturbance are observed. In the advanced stages of the malady, the slightest exertion produces intense lassitude and fainting.

It is seldom that fatal results occur among the miners, cases observed up to the present having been complicated by other maladies exercising a contributory influence, as Bright's disease, pneumonia, &c. Thus, when the disease spreads from a given centre, it does so so rapidly that, in the words of Director Myer, of Gelsenkirchen, "an entire working population is rendered incapable of labour."

One curious feature of ankylostomiasis is that the symptoms are not in proportion to the degree of infection, there being numerous instances of men who are found to be infected with the worm (worm carriers) and yet do not experience any inconvenience or exhibit the characteristic pallor or weakness. It is now recognised that the former constitute an almost equal danger as regards the transmission of the complaint to others, and they are therefore subjected to the same regulations as the rest.

The pallor and other main symptoms are due to a deficient percentage of hæmoglobin in the blood, whilst the fainting, palpitation, &c., are caused by the defective aëration of the tissues, and in particular of the heart, just as happens in cases of poisoning by carbon monoxide.

Measurements carried out by Drs. Haldane and Boycott of the total volume of the blood show that the anæmia is due to a great increase in that volume, with a corresponding dilution of the hæmoglobin, and not, as hitherto supposed, to actual loss or destruction of the blood. The same observers noticed that the disease is accompanied by a great increase in the number of eosinophile leucocytes in the blood.

The most reliable information is that gained by microscopic examination of the fæces to determine the presence of the ova, the adult worm never being found except after the exhibition of some vermifuge. The examination entails a certain amount of familiarity with the worm on the part of the operator. Dr. Tinbolt has therefore issued a series of illustrations of the ova and larvæ of the worm and analogous parasites with which it might be confounded, notably the ovum of ascaris lumbricoides when freed from the characteristic outer envelope.

In making examination of dejecta for the presence of ankylostoma duodenale, care must be taken to identify the sample examined, cases having been known where men submitted specimens obtained from admittedly exempt comrades, in order to avoid the necessity of undergoing the somewhat disagreeable treatment. On the other hand, it is stated in Belgium that men infected with the worm have made the practice of selling their fæces to others desirous of securing sick pay and allowances (practically full pay), in order to lead a life of idleness. The best means of preventing any deception of this kind is to have the sample deposited, in the presence of a trustworthy attendant, direct into a small enamelled cup fitted with a hinged lid, and provided with a label for identification. This method prevents any mistakes such as are likely to arise when the samples have to be transferred from one receptacle to another. The examination should always be performed on fresh samples, since storage either results in the development or destruction of the ova, according as the circumstances are favourable or the reverse.

III. *Treatment.*—The exhibition of anthelmintics to procure the expulsion of the worm.

Practically, there are two drugs in use—extract of male fern and thymol.

Dr. Goldman, of Brumberg, speaks highly of an infusion of acacia anthelmintica, which is largely used as an anthelmintic in Abyssinia, but it is extremely difficult to procure in Europe.

Dr. Haldane, who investigated the Dolwath cases in Cornwall, favours the use of thymol, in view of the difficulty of obtaining a reliable preparation of male fern, but Westphalian experience is adverse to its use, on the ground that the drug may produce dangerous collapse. A new remedy, just tried within the last few weeks at the Cockerill Hospital, Seraing, is composed of—

Turpine, ...	50 centigrammes.
Levigated sulphur, ...	2 grammes.
Condurango powder, ...	1 gramme.

From a half to a full dose to be taken.

The usual method of treatment in Germany is as follows:—The night the patient arrives in hospital, a dose consisting of 5 to 8 gr. of calomel with 1 drachm of pulv. jalap co. is given, followed in the morning by 10 grammes of extract filicis. This treatment is given every alternate night for about a week or ten days. This applies also to the practice in Belgium, where extract of male fern is given in conjunction with castor oil and spirits of chloroform.

A good many instances are known, especially among those only slightly affected by the disease, where the treatment has had to be repeated many times, and even then without completely expelling the worms.

IV. *Prophylactic measures.*—Since the sole means of propagating ankylostomiasis in a mine is by disposition of fæcal matter in the workings, it is of primary importance to prevent such deposition by providing suitable retiring accommodation above ground (water and earth closets), and portable pails in the parts of the mine readily accessible to the workers. These pails must be situated within easy distance of where the men work, so that the loss of time going to and fro may be reduced to a minimum. For instance, they ought to be so placed that no man should travel more than 300 yards on the level or 30 yards up and down inclines, which will not take more than five minutes. These pails of galvanised iron cost about 18s. each, and, assuming that the provision is made of one pail per four men, the outlay on this head in a pit employing 1,200 men per shift would be £270.

The cost of w.c. accommodation varies according to the class of installation provided—for example, an installation of 16 seats with automatic flush, with wired glass partitions, would cost about £600. Douche baths are also employed. The erection of proper douche baths and vestiaries combined cost a sum of about £1,750.

In the Westphalian collieries, the whole of the underground staff make use of the douche baths, but in Belgium a large proportion of the men shirk the bath, on the plea that they prefer washing at home; and in some places complaints have been made by the men's wives that those who wash at the colliery go off and spend too much time in the local public house, instead of returning home direct from work.

Drinking-water.—The practice of drinking pit water is unknown in German, Belgian, and French collieries, the men being accustomed to take coffee (more rarely, water) with them in their bottles.

In Westphalia, the water used for sprinkling the workings to prevent coal dust explosions is derived either from the mains or the marl rock, and is of good quality, so that it may be consumed by the men without danger when their own supply of beverage is exhausted.

In Hungary, Dr. Goldmann recommended the addition of citric acid to the drinking-water, believing from his experiments that the acid kills the larvæ of ankylostoma, but later researches have shown that citric acid has no action on the encysted larvæ, which form the sole medium of infection.

Washing-water for the use of the men has been tried in the Belgian mines at Liége, where the owners supplied the men with filtered water to wash their hands before partaking of food, but, as the men failed to appreciate this measure, it has therefore been discontinued.

Disinfectants in the workings.—As the ova and larvæ of ankylostoma exhibit a considerable power of resistance to disinfectants in the laboratory—in fact, it is said they seem to enjoy immersion in mercury bichloride, 2 per thousand solution—and although trials have been made with slaked lime and carbolic acid, no practical result has been obtained.

That it would be necessary to wash out a whole mine with, at best, only a problematical benefit, it is not surprising that all efforts in this direction have been abandoned. Other precautions that have been recommended for men working in infected pits are wrapping their food in clean paper and placing the packages where they cannot be fouled, holding the food in paper instead of the dirty hands when eating, keeping the hands out of contact with the mouth, not to place the lamp hook in the mouth when obliged to use both hands in the course of work or transit in the pit.

Means of preventing the transmission of infection from one pit to another.—In order to prevent miners seeking work at other collieries, they are not allowed to enter the pit unless they can produce a recent medical certificate of immunity from ankylostomiasis, or are found free from the disease when examined by the medical man attached to the colliery.

Ventilation and drainage.—As it is demonstrated that the worm cannot develop except in the presence of warmth and moisture, the spread of infection in a mine can be prevented by reducing the temperature below 20° C. = 68° F. by improved ventilation, also by removing all excess of water, especially in accumulated pools, from the workings by free drainage.

LITERATURE.

Outbreak of Ankylostomiasis in a Cornish Mine (Government Report), J. S. Haldane, M.D., F.R.S.

Report on Outbreak of Ankylostomiasis in the Westphalian District of Germany (Government Report).

Ankylostomiasis: Miners' Worm Disease, Published by the *Colliery Guardian.*

Dr. Grant said it is very unlikely that this disease will spread to Scotland, as the temperature of the mines in Scotland is much lower than that required for the development of the parasite.

Dr. Dun showed a large book which was published by the United States Government for distribution in districts invaded or likely to be invaded by this disease. The book contained much information about the disease and the forms of treatment.

Dr. Todd replied.

II.—CASE OF WEB-FINGERS.

BY DR. ALEX. MACLENNAN.

Dr. MacLennan showed a case of web-fingers which had been operated upon. The following points in the operation (a modified Zeller's) were accentuated:—

1. Aseptic precautions must be stringent.
2. The line of division of the fingers must follow the crease between them.

3. All subcutaneous tissue must be carefully dissected away, the edges of the wound being undermined. This must be done in order to reduce the thickness of the fingers; the digital vessels and nerves are not specially protected.
4. Incisions made in the dorsal and palmar surfaces relieve tension.
5. The stitches are to be inserted close together.

III.—CASE OF SARCOMA OF NINE YEARS' DURATION.

By Dr. Alfred A. Young.

The patient, aged 38, was operated on for a left-sided ovarian tumour in 1894. A year afterwards, a tumour appeared in the left iliac and umbilical regions. An incision into the mass was made by Mr. Clark in the Royal Infirmary, Glasgow, but as the lower part of the left rectus muscle was found to be involved with tumour tissue, the operation was abandoned, and a portion of the tissue was removed for microscopical examination. The tumour proved to be a spindle-celled sarcoma. The case has been under Dr. Young's observation for the last six years, and the original portion of the tumour had undergone marked atrophy and had now almost disappeared. The growth, however, had extended upwards along the sheath of the rectus, and there is now a considerable mass of two years' duration over the left costal margin. The lymphatic glands in the left axilla are enlarged. The patient's general health is very good, and there is no intestinal or pulmonary trouble.

IV.—CASE OF DISLOCATION OF THE LEFT KNEE-JOINT.

By Dr. Alfred A. Young.

The injury was produced by a blow from a "sprag" from a waggon just as the patient was extending the leg with the foot on the ground. The lower end of the femur was driven backwards and slightly inwards. The internal condyle of the femur was very prominent in the popliteal space, but there was no apparent injury to the vessels or nerves. The dislocation was reduced, and the patient made a complete recovery, being now able to play football. The joint is now quite firm and strong, though there must have been considerable tearing of the ligaments.

Dr. Young showed a skiagraph of the injury.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1903-1904.

MEETING XIII.—20TH APRIL, 1904.

The President, DR. CHARLES R. M'LEAN, *in the Chair.*

I.—FULMINATING APPENDICITIS, WITH PARTICULAR REFERENCE TO MORTALITY.

BY DR. T. K. DALZIEL.

Dr. Dalziel had dealt with six cases of fulminating appendicitis during the last two months. In most of these, there had been a sudden rupture of the organ with a train of symptoms supervening. The point of interest had reference to purulent peritonitis, and in connection with this he had systematically taken cultures in a test tube in order to determine bacteriologically the organisms present. In the six cases, he found the bacillus coli in five, and these cases all recovered. In the sixth case, where the culture showed mixed infection, the patient died, though the clinical appearances looked far more favourable for recovery.

CASE I.—Pale, flabby woman, æt. 50. The family doctor had seen her twelve hours after the first symptom had set in; there was violent pain. He cut down in the middle line, and found that the appendix was involved and had perforated, and by this time pus was found in the abdomen. The peritoneum was red. The prognosis was grave, but not without hope if the culture was pure bacillus coli. He removed the appendix and packed the wound, and the patient got uninterruptedly better. The culture continued quite pure throughout till the wound was nearly healed.

CASE II.—This patient had previously one or two attacks, with obscure symptoms, followed by recovery; but as so often happens, he got worse in the last attack, and in his case the distension was great, fluid being found everywhere in the abdomen as well as pus. In handling the bowel, there was considerable crackling, and the patient looked like dying all the time. The opinion formed was that the man could not get better unless the culture was a pure one. Recovery took place.

Case III.—History of being ill for thirty-six hours. Pus was found in the abdomen. Patient got well.

Case IV.—A Swede, æt. 17, admitted to the Western Infirmary on 31st January, 1904, complaining of abdominal pain of four days' duration. He took salts on the 27th, and early next morning he felt sudden sharp pain in the abdomen, which disappeared and could not be located. The bowels moved after the attack, his health was good, there was no question of tubercle; temperature, 98° F., though this is no guide in these abdominal cases. The tongue was furred. He looked so exhausted that the surgeon who was acting temporarily for Dr. Dalziel advised no operation. Examination of the blood showed leucocytosis of 15,000. Patient got rapidly worse; pulse, 160; temperature, 97·8° F. Dr. Dalziel had him removed to the operating room, and found that it was a case of purulent peritonitis. At the left costal margin was found a localised abscess of green pus. The appendix was ruptured. The whole of the peritoneum was washed out. The culture was pure bacillus coli. The patient left hospital quite well.

Case V.—No features of additional interest.

Case VI.—The patient was a girl, æt. 11. There was a history of two days' illness. She had previously been well; pain came on, but got easier. The diagnosis was perforated appendix. At the operation no perforation was found, but the culture obtained showed streptococci and staphylococci; it was thus a case of multiple infection. There was no improvement, and the child died from septic peritonitis.

Dr. Dalziel remembered one surgeon who said he had operated on six cases successfully. Dr. Dalziel had doubted this at the time, but in view of his own observations, where the culture was a pure one, he could now quite understand that surgeon's successful run of cases. He had therefore come to view these cases with reference not so much to the extent of the lesion, as to the nature of the culture obtained.

Some of the apparently hopeless cases did well if the culture was purely bacillus coli, whereas in the fatal case, with a history of only two days' illness and with no perforation of the appendix, the prognosis at the time of operation seemed, from the clinical appearances, far more favourable for recovery than in some of the previous cases; but in this case, unfortunately, the culture was a mixed one, and in his opinion the question as to whether the patient would pull through turned upon that point.

Dr. J. Lindsay Steven congratulated Dr. Dalziel upon his cases, and he agreed with him as to the dangerous condition where one had to deal with a mixed infection. Still, cases of general peritonitis might recover without operation, yielding to medical treatment. In cases where the peritoneum was stripped off, the patient might have difficulty from adhesions supervening. He could recall three cases which were operated on by Mr. Pringle, and all recovered. Personally, he had seen three cases of fulminating appendicitis which no surgeon could have saved, but early surgical operation was indicated.

Dr. Dalziel, in his reply, said that the bacillus coli does not tend to penetrate the tissues, whereas the streptococcus does, and this in turn is followed by the staphylococcus. In the case where he had stripped off the peritoneum, he had removed as little of it as possible. He had great faith in the manner in which the peritoneum recovers. In connection with this, he mentioned the case of a man on whom he had operated for a stomach condition, and on examining the peritoneum he found it studded over with what at the time he thought was carcinoma. He closed up the abdomen, regarding it as a hopeless case, but on investigation these nodules were found to be adhesions which had broken down, and the man was still alive.

Dr. C. R. M'Lean referred to the recent triumphs of surgery in abdominal cases, and was struck with the picture of how a patient, as described by Dr. Dalziel, could have the bowels spread out and portions of the peritoneum removed, and this followed by an excellent recovery, He considered the culture observations were most important and interesting.

II.—SEVERE INJURIES TO THE MUSCULAR, NERVOUS, AND RESPIRATORY STRUCTURES IN THE NECK.

By Dr. John Patrick.

Patient was a young lad who worked in a ropework in Rutherglen. He was obliged to go up a ladder to remove a belt, and while on the top of the ladder, which was too near the collar of the shaft, he got caught on the shaft and was revolved several times, and with such rapidity that his clothes were torn off before he dropped. In falling, his feet had come against the wall, from which the plaster had been knocked down. In descending, he fell transversely across a rope, which caught him in the neck.

He was removed to the Glasgow Royal Infirmary, where it was found his injuries included a large effusion of blood into the neck, fracture of the humerus, and fracture of three or four ribs. The sterno-mastoid muscle had been torn through on the left side, and the omohyoid projected into the gap.

For the first week his state was very precarious, but he recovered to such an extent that he left hospital in four weeks from admission.

Examination showed that there had been damage to the brachial plexus, with wasting of the muscles of the right arm; the fingers were also affected. The ulnar nerve had suffered most. Further, his breathing resembled very much the "roaring" of a horse, which is said to be due to papillomatous growths in the larynx, causing obstruction to the entrance of air. In this lad's case, some of the rings of the trachea had been damaged. He has an occasional slight cough. The voice is perfectly good; he used to be a tenor singer, but that gift is now lost. Examination by the laryngoscope shows that the cords are unaffected. Dr. S. Capie reports that reaction of degeneration is present in the ulnar nerve distribution. The power of grip on the right side is nil, whereas with the left hand the dynamometer gives 30.

III.—A CASE OF INFANTILE PARALYSIS WITH SOME UNUSUAL SYMPTOMS.

By Dr. James Dunlop.

The illness began on 11th February, 1904; the child was cross and restless. On the following day, the mother noticed that the right thigh was drawn up on the abdomen, and painful on being pulled down. For five days he slept none, being fevered and ill. There was no vomiting, squinting, or retraction of the head, but on 13th February "he had a slight convulsion"—eyes turned up and staring, and the lips trembling. He looked quite bright when seen by Dr. Dunlop; no head symptoms; temperature, 103° F. Leg still strongly flexed, and painful on movement; he cried when an attempt was made to pull it down; there was arching of the back. The leg below the knee dropped when lifted up; there was no power of extension, but he could move the foot and toes; sensation apparently normal.

17th February.—Right arm has become involved; it lies helpless at his side; apparently no power in right shoulder muscles, but fingers can be moved; the arm drops on being lifted up. The right leg not so much flexed and not so painful on pulling it down. No affection of face or of left side. Knee-jerks gone; superficial reflexes present; bowels regular, urine normal. The child takes his milk, and always takes notice of things around him; temperature still keeps at about 101° F.

27th February.—The right leg is now relaxed; it is soft and flabby, but not cold; the power of extension is still lost; temperature normal to-day for the first time. The patient is bright, and makes signs of recognition. The right arm still lies helpless at his side.

2nd March.—Temperature, 100·4° F. He does not move right leg except at the toes, and rotates foot inwards; plantar reflexes are active; he cries on moving right arm, but moves his fingers; the grasp, however, is weak. He can hold a pencil in the right hand.

5th March.—No movement in right arm or leg, except at fingers and toes; temperature, 100° F. Gentle massage of shoulder and leg advised. On 6th March, the mother thought the right shoulder was swollen and painful when touched. On 8th March, Dr. Dunlop was asked to see it, and found a very tender, fluctuating swelling over the right shoulder-joint, the veins being enlarged and well seen; movement of the joint increased the pain. The child looked pale, and was cross and restless; temperature, 100° F. No other joint involved; the leg showed no change. The swelling over the shoulder was opened in the Glasgow Royal Infirmary by Mr. Pringle, who found an abscess, not in the joint, but extending under the pectoralis minor. In the pus, a slender bacillus was found, which has not yet been identified. While in the infirmary, the child was very cross and sleepless, and as the wound was looking well he was soon allowed home.

Power of movement has gradually come back to both arm and leg, although they are still weak when compared with those of the left side. The prognosis is very good as to their ultimate complete recovery.

The unusual features of this case are—

1. The marked flexion of the thigh on the abdomen, and pain on movement in the early part of the disease.
2. The involvement of the arm five days after the leg, and the long duration of the feverishness.
3. The formation of an abscess at the right shoulder-joint.
4. The amount of recovery that has taken place in both the arm and leg.
5. The age of the child (8 months) is also somewhat rare,

as most cases occur between the second and third years of life.

With regard to the pathology, the disease has been held to be an acute infectious disorder. Marie's hypothesis is that infectious material (an infectious embolus) reaches the anterior spinal artery and its commissural branch, which passes to the anterior horn.

Multiple neuritis is very rare in children, unless diphtheritic. The treatment consisted of potassium iodide (2 grs.) and potassium bromide (4 grs. three times a day).

Dr. J. Lindsay Steven, who examined the child, raised the question as to whether it might not be a cerebral case. In acute poliomyelitis, the different lesions might be separated by an interval of several days. He had never seen a case with spasmodic flexion.

Dr. T. K. Dalziel was of opinion that in this case there had probably been two infections—(1) affecting the motor centres involving the leg and extending to the arm, this being followed by paralysis, which has recovered. He said they were all familiar with flexion, which occurs in cases of cerebral irritation; (2) there may have been some local irritation to explain the formation of the abscess in the region of the shoulder-joint.

Dr. Dunlop, in replying, said he was not able to agree with Dr. Dalziel's theory, as the face was not affected. He was rather of opinion that the condition had been due to a spinal infection, probably involving the lumbar region and travelling upwards.

REVIEWS.

The Commoner Diseases of the Eye: How to Detect and How to Treat Them. By CASEY A. WOOD and THOMAS A. WOODRUFF. Chicago: G. P. Englehard & Co.

THE small size of this book distinguishes it from most modern books on ophthalmology. Its authors profess "to consider ophthalmology from the standpoint of the physician in general practice," and propose, "mainly by describing only the commoner diseases of the eye (never using a technical term where a simpler word is available), by numerous illustrations, synopsis-headings, and a complete reference index, to popularise a study that is too often considered difficult and unprofitable."

It may fairly be conceded that the object aimed at has been attained. The book is small (491 pages), and the style of writing is notably clear and concise, albeit without suggestion of the cram book. The ground covered is well chosen, and may be said to embrace all that the general practitioner actually requires. The illustrations are useful and well produced; few are original, and an atlas published in Glasgow has been freely borrowed from.

The fact of this being a first edition probably explains several slips which are to be found. These are mostly too obvious to lead to any harm, and will no doubt be corrected in the next issue. An example is the statement that the optic nerve is developed from the mid-brain; another is the confusion of expression which leads to the impression that cones are only found in the macular region of the retina. In view of recent work on the pathology of glaucoma, exception may be taken to the dogmatic statement that this disease is "*due* to damming or blocking of the drainage from the interior of the eye."

The book is a good one, and may be heartily recommended to students as being of readable size and a serviceable clinical guide.

Ophthalmological Anatomy, with some Illustrative Cases. By J. Herbert Fisher, M.B., B.S. Lond., F.R.C.S. Eng. London: Hodder & Stoughton. 1904.

THE earlier and larger portion of this work deals with the anatomy and physiology of the eyes and their muscles, nerves, and correlated nerve-centres. Without being possessed of any striking originality, the essay is yet one that might with advantage be studied by every ophthalmologist and neurologist. It is particularly free from padding, and is yet lucid, and, making allowance for diversity of opinion and uncertainty of knowledge, accurately written, by one who has obviously given minute attention to his own subject. Some useful illustrations are introduced.

The second part consists of records of cases illustrative of the same extensive field of ophthalmological work as is covered by the first part. The author is to be heartily congratulated on the high excellence of this essay, and similar recognition is due to the publishers for the letterpress and general get-up of the book. This is, if we mistake not, one of their earliest ventures in the department of medical publishing, and we may be allowed to hope that many equally creditable productions are to follow from their press.

Progressive Medicine: a Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D. Vols. II, III, and IV. London: Rebman, Limited. 1903.

IN Vol. II, William B. Coley, M.D., considers at some length the recent advances in the "Surgery of the abdomen, including hernia;" John G. Clark, M.D., writes the article on "Gynæcology," wherein he discusses very fully all phases of cancer of the uterus; "Ophthalmology" receives consideration at the hands of Edward Jackson, M.D. Of very special interest, owing to the enormous activity that has been exhibited by workers in this field during the last few years, is the section dealing with "Diseases of the blood and ductless glands—The hæmorrhagic diseases—Metabolic diseases," by Alfred Stengel, M.D.

Vol. III contains four papers—viz., "Diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels," by William Ewart, M.D., F.R.C.P.; "Dermatology and syphilis," by William S. Gottheil, M.D.; "Diseases of the nervous system," by Wm. G. Spiller, M.D.; and "Obstetrics," by Richard C. Norris, M.D.

In Vol. IV, Dr. John C. Hemmeter writes on "Diseases of the digestive tract and allied organs—the liver, pancreas, and peritoneum;" Dr. Joseph C. Bloodgood contributes an article on "Anæsthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopædics;" "Genito-urinary diseases" is discussed by Dr. Wm. T. Bellfield, and "Diseases of the kidneys" by Dr. John Rose Bradford; Dr. Albert. P. Brubaker provides the section on "Physiology," and a "Practical therapeutic referendum" is supplied by Dr. H. R. M. Landis.

With the appearance of each successive volume, our admiration for this truly inestimable publication increases. Herein will be found everything of value that has appeared in medical literature during the past year. Each section is written by an admitted leader in his profession and speciality, and we can strongly recommend this digest as the very best of reviews.

A Clinical Handbook of Urine Analysis. By CHARLES H. BEDFORD, D.Sc., M.D. With Illustrations. Second Edition. Edinburgh: Bell & Bradfute. 1904.

THIS work is clearly undertaken by one who is thoroughly competent to state his facts with brevity, comprehensiveness, and simplicity. The second edition has been amplified by about sixty pages, and an entirely new set of illustrations has been prepared for it. We thoroughly approve of the author's tabulated scheme of urine analysis.

The subject is conveniently divided into two sections. Part I deals with the qualitative chemical examination. Part II is devoted to quantitative methods of analysis.

The author has included *polarimetry* as an alternative method for estimating glucose, as well as *cryoscopy*, which is a means of obtaining from the freezing-point of the blood and urine an indication of the excretory activity of the kidneys. The *purin bodies* found in the urine he has classified as endogenous and exogenous, and he states that at present the relation which exists between urinary purins in health and disease has not been sufficiently ascertained. When more precise information is forthcoming, it is expected that it will be possible to ascertain the rate of nuclein destruction occurring in the body, and also to regulate the diet of patients according to their metabolic functions in a way that at present is impossible.

Throughout the work, considerable attention is given to the microscopic examination of organised and unorganised urinary deposits.

The volume is an excellent record of accurate, valuable, and scientific work.

Enlargement of the Prostate: its Treatment and Radical Cure. By C. MANSELL MOULLIN, M.D., F.R.C.S. Third Edition. London: H. K. Lewis. 1904.

FROM the purely clinical aspect, this book is an excellent one. The chapters dealing with the local and general effects of prostatic enlargement, with the symptoms of that condition, with the methods of examination and diagnosis, with the general treatment and local (non-operative) therapeutics, are almost altogether satisfactory. Unfortunately, the same cannot be said of the chapters devoted to the histology and pathology of the condition. For a work just issued (1904) to contain no reference to the views so weightily propounded by Ciechanowski, either as to the errors in microscopic technique and interpretation to which the latter ascribes the blame for the, in his view, erroneous "adenoma" theory, or as to the "inflammatory" connective-tissue process in the stroma which Ciechanowski believes is the all-important factor in producing alternatively prostatic hypertrophy or prostatic atrophy (according as the stroma is affected close to the urethral mucous membrane or nearer the periphery of the gland) is quite unpardonable.

The "prostatic adenoma" or "fibro-adenoma" may be still believed in, but surely some mention of the "inflammatory" theory of Ciechanowski should have found mention in an edition just published.

Then, as regards the chapter on the "Radical Treatment of Enlargement of the Prostate," it is a little surprising to find Mansell Moullin pay such scanty respect to the work of Mr. Freyer. His suprapubic method of performing prostatectomy is indeed mentioned, but it is mentioned only *en passant.* The author *may* be right—doubtless he is—in ascribing much credit to M'Gill and his colleagues in the Leeds General Infirmary for bringing this operation into prominence originally. None the less is it true that, in a work of this kind, the success of Mr. Freyer ought unquestionably to have ensured greater prominence to the operative procedure followed by him.

Apparently Mansell Moullin attaches much more importance to Nicoll's operation (combined perineal and suprapubic method), for, whereas Freyer is dismissed with a paragraph, three pages are devoted to the description of Nicoll's operation and its advantages (the description being in great part quoted from the article by its author in the *Lancet*, 14th April, 1894). Incidentally, it may be mentioned that, at the end of the three pages devoted to Nicoll's operation, it is stated that "a similar operation has been performed by Macewen."

There are other disparities and discrepancies, and even apparent contradictions like the following, to be found in the book:—"The prostate is a much more vascular organ than is usually believed" (p. 22); "the prostate itself (unless it is inflamed or congested) is not a very vascular organ" (p. 157).

It is much to be hoped that the next edition will be brought up to date more completely than the present one can be said to have been.

The Physiological Feeding of Infants. By ERIC PRITCHARD, M.A., M.D. Oxon., M.R.C.P. Lond. Second Edition. London: Henry Kimpton. 1904.

THE author of this handbook has done much to promote a better understanding of the rational methods of feeding infants. In the first edition he expounded a practical method of accurate percentage feeding, which he had found useful in his own practice, a method founded on the American system of percentage feeding, but simplified and adapted to the requirements of the home. The success which attended the issue of the first edition has led to the publication of a second, which has been greatly enlarged and entirely rewritten. There is no doubt about the practical value and utility of the principles laid down, and as technical terms and expressions have been as far as possible avoided, the book will serve as a useful guide not only to the physician, but to the nurse.

A very important chapter will be found dealing with the modification of food in difficult cases and in special conditions as distinguished from the modification of milk in accordance with the physiological requirements of the healthy infant.

The second part of the book deals with the development and physiology of infancy, a subject of prime importance. The argument which the author wishes to impress here is, in his own words, "that a very large number of the anatomical deformities and of the so-called constitutional diseases, which are usually regarded as inevitable and pre-determined, are, as a matter of fact, due chiefly to ignorance and neglect of physiological laws. To prevent them, however, we must understand the causes which bring them about. We must be cognisant of the effects and tendency of heredity, and, with this necessary knowledge, so alter the conditions of the environment that the progress of development shall proceed along normal and physiological lines." This part of the book will prove of great value to the nurse and physician, who ought to be able to recognise at all stages any departure from what is natural in the development of the infant. The book may be highly recommended to those interested in the subject.

Tuberculosis and Acute General Miliary Tuberculosis. By Prof. Dr. G. CORNET. Edited, with additions, by WALTER B. JAMES, M.D. Authorised translation from the German, under the editorial supervision of ALFRED STENGEL, M.D. London: W. B. Saunders & Co. 1904.

OF all the excellent volumes which have appeared in this series, the present is one of the best, and perhaps the very best. It is a truly admirable monograph, representing on the part of its distinguished author an enormous amount of persevering toil and study, and offering itself to the reader as a rich treasure-house of information and pleasure. Much credit is due to the translator for giving us such an extremely readable English version.

The volume may be said to consist of two essays, in addition to a bibliography of nearly one hundred pages and an elaborate index. The first essay is entitled Tuberculosis, and extends over more than 600 pages. The second is much shorter, and is entitled Acute General Miliary Tuberculosis. The first essay consists of two parts, the one on etiology and the other on pulmonary tuberculosis. In the first part we get a historical survey, and learn about the tubercle bacillus (including its chemistry, by Dr. E. R. Baldwin), the histology of the tubercle, the modes of invasion and infection, and the questions of heredity and predisposition. The editor deals, in one of his additions, with the relation of human to bovine tuberculosis, and sides, we are glad to find, with those who oppose Koch's view of the duality of the disease. The danger of dried tuberculous sputum is now pretty well known. It has been calculated that a single individual can produce daily 7,200 millions of tubercle bacilli, a circumstance which at first suggests the constant presence around us of an overwhelming danger. This, however, is not so great as would appear, since the majority of the bacilli in the sputum are already dead, and sunlight kills the survivors in the course of some hours or days. The tubercle bacillus appears to be much less ubiquitous than was recently supposed, and to be almost confined to places where uncleanly consumptives live. The editor alludes briefly to Behring's recently expressed opinion that pulmonary tuberculosis is in most cases the result of infection in infancy through the use of tuberculous milk, the infection remaining latent till later life.

In discussing the theory of infection, Prof. Cornet remarks that, before the beginning of the nineteenth century, physicians of every nation championed the theory of the communicable nature of consumption, and this they necessarily did on the ground of clinical experience alone. Launec, who died of phthisis in 1826, attributed his illness to an autopsy wound. As might be expected, Prof. Cornet's disposition is to minimise the importance of the hereditary factor, and to emphasise that of the infectious element in the transmission of phthisis from one member of a family to another.

To exemplify the detail with which the subject is treated, we may mention that, in the description of the local subjective phenomena of phthisis, more than two pages are devoted to cough, three to expectoration, four to pulmonary hæmorrhage, three to sweating, and seven to fever.

Prof. Cornet determined the average duration of phthisis upon a basis of 800 cases, and found it to lie between two and three years. Recurrences of phthisis after the lapse of years are attributed rather to re-infection than to the waking into activity of bacilli which have lain dormant in old tubercular foci; the evidence goes to show that even within the organism the bacilli are soon destroyed.

It would be well if every physician could procure a copy of this volume, and give careful study to its contents. The practitioner who has not yet read it has much pleasure and profit awaiting him.

The Waters and Baths of Vichy is the title of a lucid and capitally illustrated pamphlet by Dr. C. E. Cormack, of Vichy and Hyères, and son of the late Sir John Rose Cormack, of Paris. Vichy is reached from Paris in six hours. Its famous thermal waters, consisting principally of free carbonic acid and bicarbonate of soda, came first into notice in the seventeenth century, when Madame de Sévigné, of "Letters" fame, wrote about them. But it was Napoleon III who made them *bien connu.* The victims of gout, rheumatism, hepatitis, diabetes, dyspepsia, cystitis, gravel and chronic Bright's disease, who go there to drink the waters, will find the new bathing establishment one of the most magnificent of its kind, some of the bathrooms being really *de luxe.* Every kind of bath and douche, including "lavages de l'estomac," with ordinary as well as mineral water, is provided, and likewise massage.

The greatest novelty is the Mecano-therapy Institute, which is part of the establishment, and in which active and passive muscular movements may be had for each individual muscle. Zander, a Swedish doctor, invented the appliance for the treatment of rheumatic joints, muscles, &c. Along with treatment, pleasure is combined, and that is to be got in the Casino with its salle de spectacle, salle de jeux, salon de fêtes, and in its gardens and terraces. The season is from 1st May to 30th September. Vichy, which has hitherto attracted more Americans than British, is, now that an *entente cordiale* exists between Britain and France, likely to attract a greater number of British invalids. The pamphlet, with eight plates, is published by Maloine, 25 Rue de l'École de Médecine, Paris.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Occipital Neuralgia as a Complication of Tonsillitis.—Dr. H. Vincent records the results of an analysis of cases of tonsillitis, with reference to the occurrence of the above complication, in the *Trib. méd.*, 1st July, 1904 (*Deutsche Medizinal-Zeitung*, 11th August, 1904).

In 136 cases of the more common forms of tonsillitis, viz., simple angina, erythematous, pultaceous, herpetic, and phlegmonous, 17, or 12·5 per cent of the patients complained of pain in the region of the great occipital nerve. Usually the seat of the pain was on one side, most frequently the right, on four occasions it was on the left side, and four times it was bilateral. Movement of the head, as in coughing or sneezing, increased the pain. It was often felt each time the patient swallowed, which seemed to point to the existence of a certain relationship between neuralgia and inflammation of the pharynx. The pain was increased by pressure on the hollow part of the neck, and over the points of exit of the occipital nerves. It might last for several days after the inflammation in the throat has subsided.

The author states that neuralgia of the occipital nerves has not hitherto been described as occurring along with tonsillitis, and explains its occurrence in the following way:—It would seem, he says, to depend on the anatomical relationship between the sensory nerves of the pharynx and the second posterior cervical nerves, from which the great occipital springs. The second posterior cervical root sends sometimes one or more sensory twigs to the spinal accessory nerve. These filaments accompany the inner branch of this nerve to the plexiform ganglion of the vagus, from which they probably issue in company with the pharyngeal nerve, which is really a continuation of the inner division of the spinal accessory. These fibres terminate in the pharyngeal plexus. This anastomosis only exists in a certain proportion of cases, hence the neuralgia in question occurs only in a limited number of cases of tonsillar inflammation.

Gonorrhœal Endocarditis.—The following case, reported by Dr. Th. Fritz in the *Korr. Bl.* of the Wurtemburg Medical Society, lxxiv, 17 (H. Winderl, *Deutsche Medizinal-Zeitung*, 15th September, 1904), contains several points of interest from a clinical and pathological standpoint.

A mechanic, aged 24, contracted gonorrhœa on 27th September, 1903. He was treated medically for four weeks, and became apparently well. However, at the end of October, indications of a severe febrile affection made their appearance. It was attended with general prostration, vomiting, hyperalgæsia, and swelling of joints. In the beginning of November, rigors occurred daily for several days and his condition became worse, and on 16th November he was removed to hospital.

Physical examination of the chest disclosed a slight increase in the area of absolute cardiac dulness to the right. The first sound was impure at the apex, but the alteration did not amount to a definite murmur. The second pulmonic sound was accentuated. There was diffuse swelling of the right knee-joint; the other joints were unaffected. With rest in bed and the administration of salicylic acid and aspirin, the pain and swelling of the knee-joint disappeared, but a blowing murmur, systolic in rhythm, became apparent at the apex. In the beginning of December, a diastolic murmur became audible; the spleen was enlarged. The rigors increased, and there was rapid loss of strength. On 18th December, paralysis of the right half of the body occurred with loss of the power of speech, and on 24th December patient died.

At the autopsy, the heart was found to be one and a half times the size of the closed hand. On one cusp of the mitral valve there were large vegetations partly composed of fibrous tissue and partly of coagulum. In the neighbourhood of the valve, hæmorrhage had taken place into the endocardium. On the apex of another curtain, warty projections of the size of millet-seeds were seen; they were partially encircled by a red zone. The tendinous cords seemed here and there to be shortened. The remaining valves and the right heart were normal. No collection of pus was found anywhere during life or at the *post-mortem* examination. There was no prostatic abscess. Permission was not obtained to examine the brain.

Leucocytes were found in abundance in sections, and in the exudation from the vegetations on staining by Loeffler's method; also cocci lying free in groups, and in the polynuclear leucocytes. They were mostly arranged in pairs, and were exactly like gonococci in appearance. They did not stain by Gram's method. It was therefore concluded that they were typical gonococci.

Case of Malignant Endocarditis, with Recovery.—Dr. Charles F. Withington, in the *Boston Medical and Surgical Journal*, 28th July, 1904, narrates a case which is of interest from the fact that cultures of the gonococcus were obtained from the blood during life, and also that the patient recovered.

The patient was a male, aged 26. He had an attack of gonorrhœa, which began about 8th March, 1904. A fortnight later, measles supervened. He had always previously been in good health. Severe pain in the region of the heart attended with dyspnœa set in suddenly; it lasted and was severe for some hours. There were also rigors, with irregular pyrexia, sweating, and cough, and four days before he was admitted to hospital pain was complained of in the left leg, which swelled rapidly and became purple in colour; the sweating also increased.

On entering hospital, the physical examination showed a well-developed but sickly-looking man. The temperature ranged between 102° and 103°, and the pulse between 160 and 170; there was orthopnœa. The area of cardiac dulness extended to 3 c.m. from the median line on the right side and 16 c.m. on the left. A presystolic thrill was felt below the nipple; the rhythm was galloping; no murmur was heard at the apex, but a short systolic murmur was audible in the fourth interspace on the left side. On examining the posterior aspect of the chest, limited areas of consolidation were found towards the bases, but not involving the whole of either lower lobe. There was marked phlebitis extending throughout the whole of the left leg. The leucocytes numbered 16,200. During the next few days, the murmur became more distinct although the action of the heart was less tumultuous; the pulmonic second sound was accentuated; there was no pericardial friction. The temperature, while ranging between 101° and 103°, showed a tendency to descend. Thirty-eight days after the onset of the gonorrhœa, blood was taken from the vein at the elbow with antiseptic precautions, and subjected to bacteriological examination, when cultures of the gonococcus were obtained. Three days afterwards, the temperature had descended to normal, and, with slight exceptions, it remained so afterwards. The phlebitis became also distinctly less. Ten days later, there were no cardiac symptoms. The area of cardiac dulness was less; the murmur was, however, present. A month later, the leucocytes numbered 9,400. Six weeks from the commencement of the attack of gonorrhœa, the patient was able to walk about. The murmur was still present, being loudest in the second left interspace; it was heard distinctly at the apex. The areas of consolidation referred to, considered to be pulmonary infarctions or embolic pneumonia, had nearly resolved.

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

So-called "Prostatic Hypertrophy" (*Anatomical Researches on the So-called "Prostatic Hypertrophy," &c.* By Ciechanowski. Translation, edited by R. H. Greene, M.D. London: Henry Kimpton).—Ciechanowski's opinions with regard to prostatic hypertrophy are so much at variance with those usually held that the following brief abstract is likely to be of interest:—

The common starting-point of hypertrophy, and of certain forms of atrophy, of the prostate gland is a productive connective-tissue process in the *stroma*. If the changes in the stroma are confined to the central part of the prostate in the vicinity of the main excretory duct, they may produce a narrowing or obliteration of the duct, with resulting accumulation of the secretion and enlargement of the peripheral lobules. The enlargement is proportional to the number of the secretory ducts and their proximity to the obstruction, and also to the degree of the *intra-glandular* pathological process (proliferation, desquamation, and degeneration of the epithelium—catarrh). The enlargement of the gland is always due to the enlargement of the acini; there is only an *apparent increase* of glandular tissue. Excluding genuine myomata, the active rôle of the prostatic muscle in hypertrophy of the gland is not proved, and is very doubtful.

If the connective-tissue changes in the stroma are mainly in the periphery of the gland and in the neighbourhood of the terminal tubules of the acini, there will be a compression of the acini by shrinkage of the connective-tissue, and the whole organ will be reduced in size. The diminution is inversely proportional to the intraglandular catarrhal change mentioned above.

If these changes be present in both centre and periphery, the organ may be unchanged in size; but if there be a preponderance of localisation centrally or peripherally, there will be correspondingly increase or diminution in the size of the organ.

The author reviews the subject of inflammation as an etiological factor in prostatic hypertrophy, and he concludes that the latter is "probably, as a rule, a consequence of inflammatory processes which are latent for years, and produce no symptoms or very insignificant ones." These inflammatory processes have probably extended from the urethra; direct proofs of the original inflammation being gonorrhœal have not been obtained, but he does not think that such a possibility can be excluded. In favour of such a relationship is the extreme frequency of gonorrhœa, and the circumstance that it very frequently settles in the prostatic region of the urethra.

The author also draws attention to the fact that, of the domestic animals, in dogs alone does prostatic hypertrophy occur, and that they alone suffer from suppurative inflammation of the urethra.

[The editor, in his preface, states that both he and Dr. Harlow Brooks have confirmed the author's views on the nature of prostatic hypertrophy.]—G. H. E.

Does Gonorrhœa cause Prostatic Hypertropy?—Edward L. Keyes, jun., M.D., Ph.D., New York, discusses this at considerable length in the *Journal of the American Medical Association*, vol. xliii, No. 3, 16th July, 1904.

The theme was suggested by the recent researches of Ciechanowski upon the pathology of prostatic hypertrophy. Keyes cites a number of illustrative extracts from the most comprehensive of Ciechanowski's monographs on the subject—viz., that rendered into English by Dr. R. H. Greene last year. The extracts deal mainly with the views put forward by Ciechanowski—(1) denying the existence of the prostatic adenoma; (2) attributing the histological changes in the prostate to chronic inflammation; and (3) attributing prostatic atrophy and hypertrophy to similar inflammatory processes differently distributed. These extracts are given merely to explain the inference drawn by Ciechanowski that "the foundation for hypertrophy of the prostate gland and certain forms of prostatic atrophy, in his cases at least, consisted in chronic inflammatory processes, the etiologic relation of which to virulent gonorrhœa is not sufficiently proven at present. Yet the great frequency of gonorrhœa in general, the great frequency of chronic prostatic inflammation due to it after all acute inflammation had subsided, and more particularly the conspicuous similarity of his observations to the pathologic changes found in gonorrhœal prostatitis, make it possible that such a relation exists."

Keyes admits that "the fundamental facts discovered by Ciechanowski have been verified by Greene, Brooks (*Journal of the American Medical Association*, 1902, xxxviii, 1051), and Crandon (*Annals of Surgery*, 1902, xxxvi, 813), and are doubtless accurate."

He demurs, however, at accepting Ciechanowski's conclusions, founded, as they are, purely upon histological appearances, or, it may be, erroneous interpretations of these.

He does not absolutely deny their truth, or even accord them scant justice; but against the pathological and histological thesis of Ciechanowski he advances a mass of clinical facts, both positive and negative, culled from "a set of case-books running back to the early '60's, and affording a wealth of clinical material recorded entirely without partisan spirit, and detailing urethral histories for many years."

He gives, first of all, a detailed table of all the "*cases of prostatic hypertrophy, real and seeming, preceded by chronic urethritis.*" This table includes 26 cases, but only 18 of these could be said to present any definite data to go on; the other 8 were either only doubtfully enlarged or presented only congestive symptoms, with no residual urine; or, finally (in 3 cases), though there was partial retention, the prostate was certainly not large, so far as examination without operation could reveal. These 18 cases were found among 433 case-histories of hypertrophied prostate. It seems reasonable to accept Keyes' opinion that, though perhaps the number might possibly have been larger had these 433 cases been more closely questioned as regards their early history, "their fewness only enforces the well-known fact that, *clinically*, prostatic hypertrophy is not often associated with history or evidence of chronic urethritis."

Further, Keyes notes that in the 433 cases 16 per cent are given as presenting "very large" or "enormous" prostates, a percentage which is identical with that in the 18, where a clear history of precedent chronic posterior urethritis existed.

Keyes notes, also, the age at which the symptoms of hypertrophy first appeared in the two series. Thus, in the 433 cases, 3·2 per cent showed symptoms below 45 years of age; in the urethritis series (18), only 1 (5·5 per cent) began before the forty-fifth year. In the larger series 9·5 per cent, in the smaller 16·6 per cent, began before 50 years of age. In the larger series, 14·1 per cent began after the seventieth year; in the smaller series, all began before that period.

The only thing deducible from this seems to be, that prostatic hypertrophy occurs perhaps slightly earlier in life in cases where there has been urethritis than in others.

Next, he considers the subject from the opposite point of view, collecting and tabulating "*54 cases of chronic posterior urethritis from various causes, followed to an age varying from 50 to 83 years, and not associated with (or followed by) prostatic hypertrophy.*"

These cases are divided into two classes for purposes of tabulation. The one table presents the observed data in 20 cases of deep stricture, 8 cases of chronic gonorrhœal prostatitis, and 4 cases of stone. These, though followed out carefully, have presented no signs of prostatic hypertrophy (clinically, at least).

The other table comprises 7 cases of stricture and 15 of contracture of the bladder-neck, all of which were operated upon, the absence of prostatic hypertrophy being proved by digital examination of the prostate.

"These 54 cases," Keyes thinks, "cover very fairly every degree of duration and intensity to be looked for in chronic prostatitis, and are, of themselves, sufficiently numerous to prove that chronic prostatitis, severe or mild, in youth or in age, does not inevitably lead to prostatic hypertrophy."

Next, taking a certain age (50 years), Keyes compares the percentage of hypertrophied prostates in the urethritis cases with the percentage in all the cases recorded in his books (2,164). He holds, apparently quite reasonably, that if the influence of chronic urethritis were great, we should find the urethritis cases showing a far greater proportion of hypertrophied prostates than the general cases which came suffering from all manner of maladies. This turns out to be by no means the case, as he shows in a further table.

Further, he draws attention to the fact (at least he seems to be quite prepared to accept it as a fact, though it may seem to many surgeons in this country somewhat startling) that "fully 75 or 80 per cent of adult males have gonorrhœa in early life, and that fully 60 per cent of these have posterior urethritis;" and alongside this he puts the fact that "less than 20 per cent of those who pass their fifty-fifth year have prostatic hypertrophy."

That does not, in his opinion, seem to show any very direct connection between the two. As he puts it, "There are not enough hypertrophied prostates to go round." Not only so—in all but 3 per cent of his cases, the symptoms of prostatic hypertrophy only appear after the age of 45; in the vast majority, indeed, much later (91 per cent not causing trouble until after the fiftieth year).

With this in view, he asserts that "to assume that the prostatitis found by Ciechanowski and his followers takes twenty or thirty years to produce its effects is to assume too much for our credence, until some direct evidence shall be brought to support such a theory."

He affirms, then, "that Ciechanowski's theory is entirely lacking in clinical support." "This is not saying that it is untrue. Yet we must conclude from the clinical facts that the prostatitis which causes prostatic hypertrophy is not clinically diagnosticable." "Either it is a spontaneous process so mild as not to form a clinical entity, and occurring spontaneously in middle life; or, on the other hand, it may be that the inflammatory cause of prostatic hypertrophy is early gonorrhœa; but that the prostate does not hypertrophy in a greater number of cases after early gonorrhœa is due either to the fact that the gonorrhœal process does not obstruct the prostatic ducts in all cases, or that the cases which do hypertrophy do so from an inherited predisposition."

He describes the conclusion of Ciechanowski as "a very direct imputation on the virtue and virginity of the hypertropied prostate, an imputation any one may well hesitate to concede, lest the passing years find him an unwilling witness to a gonorrhœal past, caught, as it were, in his own clap-trap." He emphasises the fact that "whatever this theory of Ciechanowski may mean, and whether or not subsequent investigations prove it to be accurate, chronic prostatitis, as seen by the clinician, is certainly not the adequate cause of prostatic hypertrophy, and we are by no means bound by Ciechanowski's theory to believe that every man with hypertrophy of the prostate has had gonorrhœa."—A. Y.

Prostatitis as a Cause of Prostatic Hypertrophy.—In *Le Progrès Médical* (May, 1904, vol. xix, No. 19, p. 305) Le Fur endeavours to explain the apparent difficulty of reconciling the occurrence of enlargement of the prostate with the theory of its inflammatory origin in those cases where the patients have never been known to have urethritis. He distinguishes a *primary* prostatitis as well as that following, or *secondary* to, urethritis.

Primary prostatitis may be *infective*, "as in infective diseases, in diseases of the intestines, and especially in muco-membranous colitis;" or may be "*aseptic*," where the cause is to be found in some modification of the prostatic secretion, such as may be induced by sexual excesses, masturbation, prostatorrhœa, or even exaggerated continence.

The chronic *aseptic* prostatitis may, later on in life, lead to total or general hypertrophy of the prostate, the *infective* giving rise rather to partial or segmentary enlargement.

Considering, then, that any case of chronic prostatitis is potentially a case of prostatic hypertrophy, Le Fur insists on the necessity for its thorough and early treatment. To this end, he believes systematic dilation of the prostatic urethra and massage of the gland *per rectum* are of great service.—(Note by A. H. Burgess, M.B., *Medical Chronicle*, September, 1904.)—A. Y.

The Pathology of Enlarged Prostate (*Enlargement of the Prostate: its Treatment and Radical Cure.* By C. Mansell Moullin, M.D.Oxon., F.R.C.S. Third edition. London: H. K. Lewis. 1904).—In the chapters (II and III) of this work, dealing with the histology and ætiology of prostatic enlargement, the author dismisses, practically without consideration, the possible inflammatory nature of the condition. On page 20 he states—"It is not inflammatory. The course it pursues, the symptoms to which it gives rise, and the histological changes it undergoes, are entirely different from those that occur in inflammation." Further, he states—"Nor is it mere hypertrophy, compensatory or otherwise. The structure and arrangement of the tissues present material differences even in the earlier stages." In his view—"It is essentially a fibro-adenomatous growth, resembling in some measure the normal structure of the gland, not spreading through the sheath, but extending upwards in the mucous and sub-mucous coats of the urethra and bladder." "The primary change," so far as the author has been able to ascertain in the specimens he has examined, "is the growth of imperfectly formed glandular tissue, recalling the tubular glands of the prostate, but without ducts and without arrangement."

In spite of definitely expressed views such as these, not a few of the changes which are described by Mansell Moullin might well be related to the inflammatory connective-tissue process described by Ciechanowski as forming the essential feature in "prostatic hypertrophy."

The following may be taken as example:—"The rate of growth may be uniform. More often it is very irregular, one part increasing more rapidly than those around it, and pressing upon them, and even displacing them. A group of tubules, for example, with the stroma that invests them, lying in one of the lateral lobes or in the median, begins to grow at a disproportionate rate. For a short time the glandular tissue is in excess: the cells multiply more rapidly, and the alveolar spaces enlarge more quickly. Then the investing stroma begins to increase in quantity. Soon the gland tubules become compressed and flattened; the cells undergo fatty degeneration, and disappear; the fibrous tissue becomes thicker and denser, and at length it grows into a hard rounded mass, with a laminated structure."

One cannot help feeling that the author was not, even this year, when the edition of his work in which this is contained was issued, conversant with the views of Ciechanowski, else he would have differently construed not a few of the appearances he describes.—A. Y.

The Surgery of the Prostate.—G. F. Lydston, M.D., in *The Medical Age* (25th June, 1904), formulates a number of conclusions, of which the following is a brief digest:—

1. Prostatic enlargement is not, in the strict sense of the term, a senile condition. Infection and chronic congestion are the important etiologic factors, and they are found at a relatively early period.
2. Prostatic surgery will never be properly developed until the profession appreciates the necessity of careful supervision of the genito-urinary apparatus in the male, thus permitting of early discovery of prostatic obstruction.
3. Prostatic operations are not necessarily formidable if undertaken prior to the development of septic changes in bladder and kidneys.
4. The indication for operation is the existence of a prostatic tumour.
5. Palliation by catheter, &c., is only admissible where a radical operation is, for some reason, absolutely contra-indicated. "Catheter life should never be begun save with the understanding that the expectancy of life is relatively short, probably, on the average, not more than five years."
6. Prolonged and comfortable catheter life may be regarded as exceptional.
7. "No operation can be used in all cases as a matter of routine."
8. "Perineal prostatectomy, skilfully performed, is the operation of election."
9. Statistics of prostatic operations up to the present are not of great value, on account of variation in skill of operators and age and condition of patients.
10. "Ideal conditions for the radical surgery of the prostate will not prevail until the average age of patients submitted to prostatectomy is many years below that of the patients upon whom we are at present operating. The age of the patient, however, is not so important as the length of time since the beginning of catheter life, or of serious symptoms."—A. Y.

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

Symphysiotomy in Persistent Mento-Posterior Brow or Face Presentations. By E. B. Montgomery, M.D. (*The Illinois Medical Journal*, September, 1904).—The case described is that of a primipara, aged 37. About twenty-two hours after the escape of the liquor amnii the head was found impacted in the pelvis, presenting by the face with the chin backwards. Delivery with forceps was found impossible, but it is not explained why version was not performed early in the labour, though the patient had been under observation throughout it. Symphysiotomy was performed through the middle line, which necessitated the division of bone with a saw; six centimetres of separation were obtained, and the child was with difficulty extracted by forceps, and survived only half an hour. The head measured less than 10 cm. in its biparietal diameter. Ayers' pelvic sling was used to maintain the pelvic bones in position. Solid union occurred by the twenty-eighth day, and the patient made a complete recovery, though her dismissal from hospital was delayed by an attack of septic tonsillitis.

The author quotes the paper by Wallack (Paris, 1902), in which 19 cases are recorded; the last series of 7 treated by symphysiotomy gives better results than the earlier cases treated by forceps or craniotomy, even as regards the mothers.

At the meeting where Dr. Montgomery's paper was read, Dr. Lewis, of Chicago, reported a similar case where he had saved mother and child.

A Case of Primary Hydatid Disease (Echinococcus) of the Fallopian Tube. By T. W. Eden, M.D. (*Transactions of the London Obstetrical Society*, June, 1904).—The author records the case of a nullipara, 40 years of age, who complained of pain in the back. A small tumour was found in the pouch of Douglas, and was thought to be a dermoid cyst of the right ovary. At the operation, the tumour was found to be incorporated with the upper border of the densely adherent right Fallopian tube, and to be filled with detached hydatid vesicles. The ovary was quite separate, and unaffected except by adhesions. The tube and ovary of the left side were adherent, but otherwise unaffected. There was no trace of hydatid disease elsewhere. The patient made a good recovery. The surface of the tumour was of a dull yellow colour and of very dense appearance, resembling an ovarian dermoid with cartilaginous walls. The adhesions were separated only with much time and care, and required numerous ligatures. The tumour burst during the manipulation, and so revealed its nature. After separation, the appendages of the right side were removed by transfixion and ligature of the pedicle. The appendages of the other side were involved in masses of adhesion, which were left untouched.

After examination of the literature, the author believes that only one other case of primary hydatid disease of the Fallopian tube is on record—viz., that described by Doléris in 1896. He believes that only one case of primary hydatid disease of the ovary has been recorded (Péan, 1895). Pelvic hydatids usually begin in the peritoneum or connective tissue. In the author's case the hydatids did not occupy the lumen of the tube. The patient has never been out of England.

Immediate Repair of Injuries of the Pelvic Floor. By H. C. Coe, M.D. (*New York Medical Journal*, 10th September, 1904). The author wishes to emphasise his belief that, by careful attention immediately after labour to these lacerations, the patient can be spared subsequent operations for prolapse and similar conditions. The question is not, "Do we repair such lesions?" but "How do we repair them?" If we apply the ordinary rule of the modern accoucheur—to leave a woman in as good condition as we found her—we cannot afford to do superficial work. The public in these days demands of us quite as much as the profession. We understand why a woman who sustained an apparently superficial tear, stitched at the time, presents herself a month or two later with a rectocele prolapse. The fact is she had not a simple laceration of the perineum, but a laceration of the fascia and levator ani muscles outside of the vaginal tube. It has been clearly demonstrated by anatomical researches that the essential lesion of the pelvic floor is the separation of the involuntary fibres of the levatores ani from the vagina, with or without anterior and posterior tear of the triangular ligament and sphincter ani. The circular buried suture, which penetrates the entire thickness of the vagina at the sulci, does permanently reattach the torn fascia and restore the parts to their normal condition. Such a suture should always be used in the immediate operation. It can be easily and quickly inserted, entirely controls the troublesome oozing which is often present, and brings the separated levatores ani into close contact with the relaxed vagina. The parts should be thoroughly exposed by a gloved finger introduced into the rectum. The aim is not only to strengthen the sphincter, but to pass the sutures clear through the vagina, in order to pick up the torn levator ani fibres or fascia, especially at the points where they are attached to the vagina (at the lateral sulci), and also where they blend with the sphincter ani.

Attention is so likely to be centred on the torn sphincter that the mischief done prior to the birth of the head is overlooked.

Separation of the Vagina from the Vulva. By Bouchacourt (*L'Obstétrique*, May, 1904).—The author read a paper before the Obstetrical Society of France, in which he related three cases in which the vagina was almost completely separated from the vulva, to which it was attached only in the region of the clitoris. In one of these cases there was no tear of the perineum. The parts were brought together with catgut, and the perineum, where torn, was repaired with silkworm. The results were good. The author suggests the opinion, founded on numerous observations, that the tearing of the perineum often begins by a separation of the posterior column of the vagina from the vulva. If this be so, the stitches should be passed longitudinally and not transversely, for the important part of the operation is to obtain firm union of the posterior column at its lower end.

On the Application of External Pressure in Presentations of the Head. By W. Bokelmann (*Graefe's Sammlung*, 1904, vol. v, No. 7). —The author says that when, in 1867, Kristeller published his paper on expression of the fœtus his method was universally accepted: all were anxious to adopt a plan which would obviate the risk of septic infection. In these modern days of aseptic midwifery, Kristeller's views and practice have fallen into abeyance, as the author shows by numerous quotations from the chief German text-books. Another reason for this is the adoption of Lahs' view of the mechanism of labour, for, according to him, pressure is not exerted along the line of the fœtal axis, but the fœtal mass may be considered a fluid mass. This opinion the author combats, so far, at least, as concerns the mechanism after the rupture of the membranes. Dr. Bokelmann objects to the term *expression*, as this implies the expulsion of the child. In this paper he recommends pressure as a means of hastening labour, not necessarily in the final stages. On the contrary, he does not think that it is of much use in the case of primiparæ, where the labour is delayed by rigidity of the soft parts at the pelvic outlet. The method is, of course, very ancient, and is in common use among so-called savage races; but among such peoples the pressure may be too severe, and do injury to the mother and child. The pressure should be applied to assist in dilating the os uteri when the membranes have ruptured early. It should be applied to assist the presenting part to engage even in cases of moderate disproportion between the presenting part and the pelvis. It is specially useful in cases of delay in the second stage in multiparæ, when the pains seem to be feeble and little progress is being made, as also in helping the natural powers when the presenting part is at the outlet. It should always be used in preference to other methods, such as hooking the finger into the axilla, when there is delay after the birth of the head. It is of great assistance to the operator in extraction with the forceps or cranioclast. Pressure can be applied with the patient in the dorsal or in the lateral positions. It should be applied downwards at the fundus to aid the action of the diaphragm, and backwards on the front of the uterus to reinforce the abdominal muscles. With moderate pressure no harm can follow. Interrupted pressure cannot suffocate the child, as the pressure is applied over a small area of the placenta, and any ordinary pressure cannot, or at anyrate, does not, produce separation of the placenta. The author has never seen post-partum hæmorrhage follow this treatment. The method is contraindicated where the uterus has been damaged by previous rupture or by Cæsarean section.

Retroversion and Retroflexion of the Gravid Uterus. R. Chrobak (*Volkmann's Sammlung*, June, 1904, No. 377).—In his well-known portrait by Sir Joshua Reynolds, William Hunter has beside him a specimen of this condition, and this specimen is believed to be one of the first, if not actually the first case, in which an accurate diagnosis was established.

The conditions named in the title of the paper have been often discussed, and the author here tries to simplify the descriptions with the object of throwing light on the treatment appropriate to each kind of case.

By retroversion of the gravid uterus is meant any deviation by which the fundus of the pregnant uterus is carried backwards and the cervix forwards. In the first degree of displacement, the fundus lies not lower than the os uteri; in the second, the fundus has fallen distinctly below the os.

In retroflexion the axis and shape of the uterus are distorted, so that the fundus is bent backwards, forming an angle with the cervix at about the level of the os internum. These conditions are quite distinct from pouching or sacculation of the uterine wall into the pelvic cavity. A normal gravid uterus can become retroverted, or a retroverted uterus can become pregnant; in either case it will rise about the twelfth week, if not hindered by some abnormality, such as a markedly projecting sacral promontory, or inflammatory adhesions, or the presence of tumours. If the round ligaments are to reduce the displacement, it is essential that the cervix shall not lie above the edge of the symphysis pubis. The author is of opinion, based upon his own observations, that in uncomplicated cases a retroflexion is always spontaneously reduced, but a retroversion very rarely. The author discusses sacculations at length, and then discusses the pathological changes produced by these displacements. He seems to agree with the dictum of Pinard and Varnier that in a case of gravid retroversion the uterus is of little importance—the bladder is all important.

The history of fatal cases shows the importance of early diagnosis, for bladder lesions become rapidly aggravated, and may lead to sloughing of that organ, causing death by sepsis or by uræmia. When there is retention of urine, the bladder must be carefully and slowly emptied. If catheterism be found impossible, it is unsafe to aspirate above, so the free incision *per vaginam* is recommended, though this, too, is not free from danger. The uterus should be replaced, if this be possible. If it cannot be pushed up at one sitting, the vagina should be packed with gauze to secure the ground gained. Traction on the cervix may help. In some cases there is no room in the pelvis to turn the uterus, and in such cases it is sometimes possible to effect the object desired by pushing the whole uterus into the abdomen. If these measures fail, abortion must be induced by pushing a bougie through the cervix if this can be reached, or by puncturing the body of the uterus *per vaginam*. Abdominal section is not recommended in cases uncomplicated by tumours: it is dangerous and difficult, especially on account of adhesions to a necrosing bladder. The uterus can more easily be opened from the vagina. If it can be reached high up near the cervix (anatomically low), it can even be incised without opening the peritoneum. The author, though without personal experience of the procedure, recommends it in cases where abortion does not immediately follow the puncture of the membranes, and at the same time the symptoms of bladder rupture are threatening.

[This important paper is abstracted at length by myself in the September number of the *Journ. Obst. and Gynæ. Brit. Empire.*—E. H. L. O.]

NERVOUS DISEASES AND INSANITY.

By Dr. R. S. STEWART.

Obsessions. By Shaw (*Journal of Mental Science*, April, 1904).—The distinction of morbid obsessions, which may be either essential or symptomatic, from delusions, ordinary psycho-sensory hallucinations or illusions, lies in the fact that they arise, initially at all events, in a state of clear consciousness. Dr. Shaw classifies these, after Magnan's definition, into besetting or obsessing words, besetting thoughts and besetting images, and illustrative examples of these are cited. Neuropathic heredity and neurotic constitution are almost invariable factors in the etiology. A sexual element is present nearly always, and often there is a history of exhausting illness, prolonged vigil, fright, or some striking utterance, though mental and nervous exhaustion are not always etiological factors. Sometimes a toxic element seems to be present, and some of the symptoms would seem to point to a vasomotor factor in the pathogenesis. Physiologically a species of dissolution appears to take place, the highest and last evolved form of control, that of the thoughts and emotions, being the first to be lost, then the control of the actions, and lastly, in progressive cases, more or less blurring of the consciousness.

Social Causes of Alcoholism. By Sullivan (*Journal of Mental Science*, April, 1904).—In considering the social causes of intemperance it is necessary, this writer points out, to distinguish two opposed types of drinking—the drinking that goes with conditions of relative luxury and finds its most frequent expression in convivial drinking, and the drinking that goes with conditions of relative misery, of which bad industrial circumstances are the most considerable factor.

Convivial drinking may, and often does, lead to drunkenness, but, at least in its pure form, does not tend very much to chronic alcoholism. Industrial drinking, on the other hand, while leading also, though less immediately, to drunkenness, tends rapidly and fatally to chronic intoxication.

From a statistical point of view, therefore, while chronic alcoholism always implies the existence of drunkenness, drunkenness by no means implies the existence of chronic alcoholism. In England this divergence between the two phenomena is best seen in the prosperous mining districts, which, by reason of their prosperity, are at once more drunken, but less alcoholic, than any other part of the country.

The greater social evils that are in important degree caused by alcohol are related to the chronic intoxication, and are therefore mainly due to industrial drinking.

While educational, religious, and similar influences can control the excesses of convivial drinking, they have but little action on industrial drinking, which can only be checked by raising the standard of living, and, in a minor degree, by such methods as restricting the facilities for obtaining alcohol during working hours, and providing hygienic substitutes.

General Paralysis and Crime. By Baker (*Journal of Mental Science*, April, 1904).—From a survey of sixty cases admitted to the Broadmoor Criminal Lunatic Asylum, it is found that homicidal acts are chiefly associated with melancholic conditions and states of persecutory mental disorder; that these conditions invariably precede the onset of the physical symptoms, but form part of the disease itself; that the mental phenomena, the delusions and hallucinations, are not fickle and inconstant in character, but sufficiently fixed and systematised to cause resolute and purposive homicidal acts, and that very frequently the offspring is the victim of the destroyer, and that, as a rule, the murder or attempted murder is not the result of impulse; that sexual offenders are influenced by alcohol, which stimulates the genital sense; and that the thieving propensities of the general paralytic may in great measure be ascribed to a reversion, by a process of dissolution, to the acquisitive tendencies which form a prominent feature of the mental activity of childhood.

Status Epilepticus. By Clark and Prout (*American Journal of Insanity*, July, 1904).—If the special involvement of any particular type of cell is indicative of the essentially sensory or motor character of epilepsy, it would seem, according to these observers, that the view is correct which concludes that epilepsy is essentially a sensory phenomenon, as the cells of the second and third layer of the cerebral cortex are especially involved. The essential lesion of epilepsy pertains to the nucleus of certain of the cortical cells, and is of such a nature as to seriously jeopardise the cell for considerable periods, and ultimately causes its destruction. The cellular chromatolysis in epilepsy is a nutritional change brought about by nuclear toxæmia, since the nucleus presides over the process of elimination, absorption, and digestion in the cell unit. The *rôle* of the leucocyte in the cortex after severe epileptic explosions is most probably that of a phagocyte, and the neuroglia overgrowth in epilepsy is one of its more remote sequences, and probably occurs in response to toxic irritation.

Nervous Leprosy. By Raymond (*Archives de Neurologie*, August, 1904).—It is contended in this paper that, while the generality of neurites are of a toxic origin, that which is associated with leprosy constitutes the most perfect type of bacterial neuritis. The pathological anatomy of leprosy shows that the nervous lesion is that of peripheral neuritis, upon which depends the greater part of the trophic (muscular, cutaneous, and osseous) changes, a true ascending neuritis starting from an area of cutaneous infection and following the nerve fibres themselves.

Radium in Nervous Therapeutics. By Foveau de Courmelles (*Archives de Neurologie*, September 1904).—This agent, like the *x*- and ultra-violet rays, is a powerful analgesic. In an experience extending over two years this author has observed the sedative action of this agent, with activities of from 140 to 10,000, and in continuous or interrupted applications, upon pain whether organic or cancerous, nervous or neuralgic, and its application has been found to succeed where other medicinal or physical agents have proved powerless. Facial neuralgias of old standing, some of which had been subjected unsuccessfully to stretching or section of the nerve, sciatic neuralgia, and the girdle pains of ataxia, yielded more or less rapidly to radium applications.

The Febrile Forms of Tabes. By Faire (*Archives de Neurologie*, September, 1904).—Two types of febrile forms of this disease, apart from the febrile accidents occurring as a consequence of infection of the internal cavities, the bladder, intestines, or broncho-pulmonary system, are recognised by this writer. In the first the onset is accompanied by distinct fever, and its evolution is grave, the patient dying in about two years of what is a kind of acute tabes; in the second case the temperature is habitually some tenths of a degree above the normal, and this is increased on the slightest effort.

Nitrate of Soda in the Treatment of Tabes. By Oberthür and Bousquet (*Archives de Neurologie*, September, 1904).—This drug has been found to act most efficaciously upon the painful manifestations of this disease, and especially in those cases where the pains were particularly continuous and rebellious, and where all other therapeutic measures had failed. It produced a like satisfactory effect upon the inco-ordination, and the progress of those which were submitted to re-education was much more rapid than the cases in which this agent was not used.

Books, Pamphlets, &c., Received.

Manual of Gynecology, by D. Berry Hart, M.D., and A. H. Freeland Barbour, M.D. With 12 Lithographs and 359 Woodcuts. Sixth Edition. Edinburgh: W. & A. K. Johnston, Limited. 1904.

New Methods of Treatment, by Dr. Laumonier. Translated and Edited, from the Second Revised and Enlarged French Edition, by H. W. Syers, M.A., M.D. London: Archibald Constable & Co., Ltd. 1904. (7s. 6d. net.)

Lectures on Diseases of Children, by Robert Hutchison, M.D. London: Edward Arnold. 1904. (6s.)

Syphilis and Gonorrhœa, by C. F. Marshall, M.D. London: Rebman, Limited. (8s. net.)

Clinical and Pathological Observations on Acute Abdominal Diseases, Due to Conditions of the Alimentary Tract and the Uniformity of their Origin: The Erasmus Wilson Lectures, 1904, by Edred M. Corner, B.Sc. London: Archibald Constable & Co. 1904. (3s. 6d. net.)

A Short Treatise on Anti-Typhoid Inoculation, containing an Exposition of the Principles of the Method and a Summary of the Results achieved by its Application, by A. E. Wright, M.D. London: Archibald Constable & Co., Ltd. 1904. (3s. 6d. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 22ND OCTOBER, 1904.

	WEEK ENDING				
	Sept. 24.	Oct. 1.	Oct. 8.	Oct. 15.	Oct. 22.
Mean temperature, . .	53·6°	51·6°	49·6°	46·9°	52·8°
Mean range of temperature between day and night, .	34·5°	27·5°	21·1°	29·3°	21·4°
Number of days on which rain fell, ...	1	3	7	5	3
Amount of rainfall, . ins.	0·03	0·87	0·57	0·12	0·28
Deaths registered, . . .	243	249	233	254	258
Death-rates, ...	15·9	16·3	15·2	16·6	16·9
Zymotic death-rates, . .	0·8	1·4	1·0	1·4	1·9
Pulmonary death-rates, .	2·9	3·7	3·5	4·5	4·8
DEATHS—					
Under 1 year, . . .	57	72	51	60	77
60 years and upwards, .	51	57	50	48	40
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	1	..	1	3	3
Scarlet fever, . . .	1	3	1	2	1
Diphtheria, ...	1	...	1	2	5
Whooping-cough, . .	9	15	10	12	15
Fever, ...	1	3	...	2	5*
Diarrhœa, ...	30	28	18	15	17
Croup and laryngitis, .	...	1	1	1	2
Bronchitis, pneumonia, and pleurisy, . . .	27	32	34	40	43
CASES REPORTED—					
Small-pox, ...	1	...	...	1	...
Diphtheria and membranous croup, ...	9	11	19	18	12
Erysipelas, ...	15	27	27	19	36
Scarlet fever, ...	27	45	38	27	39
Typhus fever, ...	...	1	...	...	...
Enteric fever, ...	9	22	17	19	13
Continued fever, . . .	...	1	...	...	...
Puerperal fever, . . .	2	2	...	2	...
Measles,†	23	70	51	70	47

* 1 Typhus. † Measles not notifiable.

SANITARY CHAMBERS,
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ORIGINAL ARTICLES.

EYE-STRAIN AND ITS CONSEQUENCES.[1]

By A. MAITLAND RAMSAY, M.D.,

Fellow of Faculty of Physicians and Surgeons, Glasgow; Surgeon to the Ophthalmic Institution, Glasgow Royal Infirmary.

In the eighth volume of the *Transactions of the Clinical Society of London* there is a communication by Mr. Brudenell Carter on "A Case of Vertigo simulating Brain Disease, and produced by Strain of the Convergence Muscles of the Eyes." As this paper attracted much attention at the time when it was read, and as it is frequently quoted, I shall briefly summarise it. The patient was a student of Oxford University. He was reading hard for an honours degree when his studies were suddenly interrupted by the occurrence of symptoms which the medical men, whom he consulted, attributed to some grave disorder of the brain. He was consequently advised to leave the university, and to abandon his studies. After his return home he felt no better, and further medical advice was sought, with the result that the original diagnosis was confirmed; and, in order that his brain should have the absolute rest that was deemed necessary, he was also recommended to take a voyage to Australia and back. This advice was followed, but the patient came home in no way improved in health. "He was then told that little or nothing more could be done for him; that he must abandon the idea of carrying on the family business, or of taking any active part in life; and that he must also abandon an engagement of marriage which he had formed prior to his illness."

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[1] A post-graduate lecture delivered at the Glasgow Ophthalmic Institution, 1st November, 1904.

Matters were in this pitiable state when the patient's father heard of the ophthalmoscope from some friends, and brought his son to Mr. Carter in the forlorn hope that an examination of the background of the eyes might throw some light upon the case. The condition was described as very peculiar, because, while memory, intelligence, and mental power generally were all quite up to the average, the patient was entirely unable to read—"before he had read a page he became the subject of double vision, followed by vertigo, and, also, if the effort was continued, by sickness, palpitation of the heart, and intense headache." When he did not try to read he was, to all appearance, in perfect health. Ophthalmoscopic examination showed little abnormal, but in the course of the examination it was discovered that the patient was myopic, and that he had never worn glasses. Suitable spectacles were provided, and three weeks later the patient reported himself to Mr. Carter, and said—"I have come to see you again, because you told me to do so, but I have nothing to say, except that I am quite well. I am going to be married next week, and to set to work at the bank as soon as we return from the wedding tour."

In commenting upon this case, Mr. Carter said that, "whenever there is pain or distress about the head, the nature of which is not fully apparent, it will be a prudent precaution to examine into the state of vision and of refraction, into the strength of the recti muscles, and into the conditions under which they are called upon to act. Even if this investigation is too much to be expected in every case, it may surely be said to be imperatively called for before a patient is either sent to Australia in order to afford rest to his brain, or is advised to abandon his position, prospects, and duties in life."

These words were spoken almost exactly thirty years ago, and since then the attention of the medical profession has been directed again and again to the causal relationship of eye-strain to headache and other functional nervous disorders. Yet, though it is now widely recognised that serious constitutional troubles may originate as a result of uncorrected errors of refraction, most of the text-books on general medicine make very slight reference to the subject, and, consequently, an ocular examination, instead of being one of the first steps in diagnosis, is frequently undertaken only as a last resort. For that reason, ophthalmic surgeons must be grateful to Dr. George M. Gould for the forceful way in which he has recently written on the subject. In two highly suggestive and most interesting volumes, entitled *Biographic Clinics*, this author has sought to prove that the continued ill-health of De Quincey, the Carlyles, Darwin, Huxley, George Eliot, Browning, and several others, was the result of eye-strain. He endeavours to show that all the fourteen patients whose histories he describes suffered because of near use of the eyes, and obtained relief only when they put reading or writing aside, and took long walks or horseback exercise in the country: whenever they resumed literary or scientific work, the headaches, the anorexia, the sleeplessness, the irritability of temper, and the depression of spirits, which affected them all so greatly, at once returned. It is easy to say that Dr. Gould has failed to substantiate his contention, and that he writes as one possessed by a fixed idea, but every impartial critic must admit that there is much to be said in his favour. He has, at all events, by his strong statements, awakened the mind of the profession anew to the injurious effects of eye-strain, and has, by his teaching, made it more and more apparent that in many cases of dyspepsia and nervous prostration the advice of an ophthalmic surgeon may result in the rapid restoration of the patient to health.

It must, indeed, be admitted that some of our American confrères have shown a tendency to exaggerate the importance of ocular defects, and have set down uncorrected errors of refraction as the cause of migraine, epilepsy, chorea, asthma, anæmia, constipation, drunkenness, and many other ailments. Such special pleading has never found favour in medicine, but the loose and irresponsible statements of a few ought not to be made the excuse for ignoring the essential truth of Gould's contention that low degrees of ametropia are responsible for headache and many other nervous troubles, and that careful examination of the eyes ought to be a first step in rational therapeutics. A great deal of suffering might be prevented were it always remembered that ocular disturbance may be a possible cause of the mischief, and that this is none the less the case though the error of refraction be so slight that it does not in any way interfere with vision. Indeed, it often happens that when eye-strain is suggested as a cause of persistent head-pain, the patient at once replies that there can be nothing wrong with his eyes, because he sees perfectly well. Such a statement should, however, never be accepted as a reason for neglecting to use the ophthalmoscope. In many instances where there is no complaint of impaired eyesight, ophthalmoscopic examination may reveal the existence of serious disease which would otherwise have remained undetected. It cannot be too often repeated, or too strongly urged, that neglect to examine the fundus oculi may deprive the physician of a knowledge of the very facts necessary to enable him to form an accurate diagnosis. All experience, indeed, teaches that it is the low rather than the high degrees of refractive error which induce the greatest amount of reflex disturbance, and that ametropia or muscular imbalance may, on careful examination, be discovered in cases where the existence of any defect was quite unsuspected by the patient or by his friends.

Gould and his followers, however, weaken their position by under-estimating the important part which other causes play in the origin of head-pain, visceral disturbance, and other functional nervous disorders; for, if symptoms suggestive of serious disease of the brain, kidneys, &c., may be simulated by the disturbance due to an error of refraction, so also may troubles arising from constitutional conditions mimic those resulting from eye-strain. There is nothing pathognomonic in the reflex symptoms arising from refraction errors; and although the patient's account of his symptoms may suggest eye-strain as a probable cause, yet a thorough diagnosis requires careful examination, not only of the eyes themselves, but also of every other organ of the body. If, therefore, there be a tendency on the part of the general practitioner to estimate too lightly the influence of eye-strain in causing, or aggravating, headache and other functional disorders, the specialist on his part must be exceedingly careful to avoid attributing to an error of refraction symptoms which are in reality the outcome of some morbid constitutional state. The all-important thing to remember is that eye-strain may be the unsuspected cause of much suffering for which it is difficult to offer a satisfactory explanation.

In many cases, however, the symptoms are referred in the first instance to the eyes themselves, and are collectively spoken of as asthenopia. The clinical picture presented by this condition is well-known. Mackenzie described it as "that state of vision in which the eyes are unable to sustain any continued exercise upon near objects, although the patient on first viewing such objects generally sees them distinctly, although he can employ his sight for any length of time in viewing distant objects, and although the eyes appear sound."

Every attempt to read is attended by a sense of confusion—the print first becomes unsteady and blurred, and then gradually fades from view. It becomes visible again after the eyes have been rested and gently rubbed for a few minutes, but persistence quickly brings about exhaustion, and it is, at length, impossible to see any minute object distinctly. Complaint is usually made of a dull aching pain (sometimes accompanied by twitching of the lids and facial muscles) behind the eyeballs, and these feel tight and hot, and may be unduly sensitive to light. The margins of the lids are inflamed; the ocular conjunctiva is injected, suffused, and bleary; the ciliary region may be tender on pressure, the choroid congested, the retinal vessels tortuous and full, and the pupil contracted. At other times the local manifestations may be little marked or even absent altogether, but whenever the patient reads or writes he complains of headache. The pain may be dull and throbbing, or acute and neuralgic; it may come on while the eyes are being used, or it may not be felt until the following morning on first waking; it may be constant or periodic; it is frequently frontal, just above the eyebrows, but is also often occipital or in the nape, radiating down the back and along the arm, and at still other times is felt most severely in one or both temples. In this last form, especially when unilateral, it is often accompanied by nausea and vomiting, and closely simulates typical migraine. Occasionally every attempt to use the eyes for close work is accompanied by diplopia, speedily followed by giddiness and sickness, sensations similar to those experienced by some when objects are moved rapidly before the eyes—*e.g.*, on looking at the landscape from a carriage window while travelling by an express train. Some patients also complain of palpitation of the heart, of general nervousness, of irritability of temper, of sleeplessness, and of numerous other functional disorders which, although purely reflex in origin, may so closely simulate organic disease as to make diagnosis very difficult.

The mechanism of eye-strain is not difficult to follow, and when once it is understood the reflex disturbances to which it may give rise are easily explained. The ideal eye is one adapted to receive on the retina a distinct image of a distant object when the ciliary muscle is relaxed, and of a near object when that muscle is contracted. This adaptation to variations of distance is spoken of as "accommodation," and what I am about to say of it may be better understood if I give first a brief account of the anatomy of the ciliary region.

The lens, enclosed in its capsule, is suspended by a ligament (the zonula) between the aqueous chamber and the vitreous. The fibres constituting the ligament are attached on the one hand to the anterior and posterior surfaces of the lens capsule all round the equator, while on the other they are attached to the ciliary processes and the depressions between them, and some can be followed backwards as far as the *ora serruta*. The ciliary processes form the part of the uveal tract situated between the choroid and the iris. They consist of a series of folds, the free anterior extremities of which project into the space surrounding the lens, while posteriorly they are continuous with the choroid. The ciliary muscle lies beneath the ciliary processes. It is composed of unstriped fibres, and consists of two parts. The larger portion is made up of longitudinal fibres firmly inserted into the sclerotic where it joins the cornea, and these passing backwards are attached to the anterior portion of the choroid. The smaller circular portion lies inside the larger, and surrounds the peripheral margin of the iris. When the ciliary muscle contracts, the anterior surface of the lens becomes more convex and approaches the posterior surface of the cornea.

The exact mechanism of accommodation is, however, still a matter of controversy. Helmholtz believed that contraction of the ciliary muscle was brought about by relaxation of the suspensory ligament, while Tscherning affirms that the change in the shape of the lens is due to tension of the zonule. Quite recently, however, Grossmann has demonstrated that, when the ciliary muscle contracts, the ligament slackens, and the anterior and posterior surfaces of the lens become more convex. He has shown that this increase in convexity is not spherical, but that the central portion of the lens becomes much more curved than the peripheral. These researches, therefore, support Helmholtz as to the slackening of the zonule, but are contradictory of his assumption that in the act of accommodation the lens becomes spherical. On the other hand, they confirm the observation of Tscherning that while the surface of the lens is more convex at the centre it is flattened at the periphery, but seem to show that he is mistaken in asserting that the change in shape is the result of tension of the zonule. The opposing theories may, however, be in great part harmonised if Priestley Smith's hypothesis be granted—viz., that if the lens fibres are arranged so as to cause resistance progressively greater toward the equator then lenticonus will be brought about by slackening the suspensory ligament. Be that as it may, however, the all-important clinical fact remains that the accommodation of the eye for varying distances is due to the contraction of the ciliary muscle.

Consideration must, however, be given not only to the refraction of the normal eye but also to its motility. The movements of each eyeball are controlled by six muscles, four straight and two oblique; and the interaction of those muscles is so delicately adjusted that, in direct vision, the two images formed in the two eyes fall upon the macula of each retina and are fused into a single mental perception, thus giving rise to binocular vision. Any want of harmony in their working at once causes diplopia with all its attendant discomforts. There is, moreover, an intimate relation between the ciliary muscle and the extra-ocular muscles, more particularly the internal recti, and it is only when co-ordinate action of these is perfectly adjusted that the eyes assume the proper position for binocular vision. It is true that the acts of accommodation and convergence are not indissolubly connected, but so intimate is their association that exercise of the one is involuntarily accompanied by an equivalent action of the other, and anything which interferes with this close relationship at once produces disturbance of sight, and may form a starting-point for reflex nervous disorders.

This will be all the better understood when the innervation of the ocular muscles is considered. Motility is controlled by the third, fourth, and sixth nerves, while sensation is supplied by the fifth or trigeminus. The third cranial nerve supplies the intrinsic muscles of the globe, the levator palpebræ superioris, and all the extrinsic, except the superior oblique and the external rectus—the former innervated by the fourth and the latter by the sixth. When, however, these nerves are followed to their origin in the base of the brain, their intimate relationship becomes at once apparent. In the floor of the aqueduct of Sylvius are masses of grey matter which form the nuclei of the oculo-motor nerves. The general nucleus of the third consists of a series of nests of grey matter each of which represents one of the muscles innervated by the nerves. Their arrangement, determined partly by experiments on animals and partly from observations in cases of nuclear paralysis occurring in man, has been determined to be, from before backwards, as follows :—

Sphincter iridis	Ciliary muscle	Median line
Levator palpebræ	Internal rectus	
Superior rectus	Inferior rectus	
Inferior oblique		

The nucleus of the fourth nerve is nearly continuous with the lower end of the third nucleus, while that of the sixth is situated farther back immediately below the floor of the fourth ventricle, beneath the eminentia teres and in front of the striæ acusticæ. The close physiological association of the ocular nerves is explained by the proximity of their nuclear origin, and renders probable the existence of "association-fibres" to connect the nucleus of the nerve supplying the internal rectus of one side with the nucleus of that for the external rectus of the other. The oculomotor nerve is also closely connected both with the trigeminus and the sympathetic through the ciliary ganglion.

When it is remembered that comfortable vision depends upon the harmonious action of so many muscles and nerves, the wonder is not that muscular imbalance sometimes occurs, but rather that orthophoria is met with so frequently; and that it is so depends, in all probability, largely upon the controlling influence of the centre for binocular vision. Anything which weakens the impulse for fusion renders muscular imbalance very prone to occur, and facilitates the occurrence of strabismus.

Moreover, the refraction of the eye is rarely emmetropic. Examination, widely extended, has shown that the eyes of newly-born children are, with rare exceptions, hypermetropic, and that with the growth of the eyeball the hypermetropia gradually diminishes, till about the twelfth year it disappears altogether. The proportion of eyes which reach the emmetropic state varies with the habits of the people. Savages almost invariably possess hypermetropic eyes, but the advance of civilisation renders keen, long sight less and less essential for existence and the eyes adapt themselves to the special requirements of their possessors. During school-life great strain is often thrown upon the eyes, and, if there be any inherent weakness, the sclerotic yields too easily to the intra-ocular pressure, and the enlargement of the eyeball is not arrested at the stage of emmetropia, but continues till it gives rise to myopia. Cohn, Risley, and others have shown conclusively that close study during the years of school-life is a most important factor in the production of short sight, as well as in making it worse where it is already present. It will be remembered that in emmetropia distant objects are seen distinctly when the eye is in a state of rest, and that by the exercise of accommodation clear vision is easily obtained of objects at varying distances. It will be remembered further that a very constant association exists between the acts of accommodation and convergence—the nerve impulse conveyed to the ciliary muscle being accompanied by a similar impulse proceeding to the nerves supplying the internal recti. This ideal condition is at once disturbed by any change in the refraction of the eyeball. The hypermetropic eye is too short, and consequently, in a state of rest, images of distant objects will be formed behind the retina, and only a blurred picture perceived, until by contraction of the ciliary muscle the lens is gradually made convex enough to accurately focus upon the retina the object looked at. The nearer the object the more powerful is the effort of accommodation required to enable it to be seen distinctly, and consequently, in order to relieve the accommodation and the convergence power, the natural tendency is to hold things as far away from the eyes as possible. In myopia, on the other hand, this state of matters is entirely reversed, and the strain is thrown, not on the ciliary muscle, but on the internal recti. The myopic eye is too long, and consequently the image of a distant object is formed in front of the retina. If, therefore, it is to be seen distinctly without the help of a concave lens, the object must be brought nearer and nearer to the eye, and thus a short-sighted person holds things close to his eyes, thereby over-taxing the power of convergence. If astigmatism co-exists along with hypermetropia or myopia, the strain on the ciliary muscle and the internal recti muscles will be all the greater; and if, in addition, there be a difference in the near point for each eye (anisometropia), the effort to maintain binocular vision under such disadvantageous conditions will bring about exhaustion all the more quickly.

It is well known that for comfortable sight it is necessary to have from one-third to one-half of the accommodative power, and nearly two-thirds of the convergence power, in reserve. Only for a very short time can the full energy of any muscle be exerted without fatigue, and if the muscle is to be used continuously for any length of time there must always be a large reserve store of power. The ocular muscles form no exception to these laws, which are the true key to the proper understanding of the various signs and symptoms associated with eye-strain. The aim of the surgeon in every case of ametropia, or of abnormal motility of the ocular muscles, is to re-establish emmetropia or orthophoria by the prescription of suitable spectacles or by operation on the recti muscles; and in most instances, whenever that is accomplished, muscular fatigue and nervous exhaustion are speedily relieved.

Eye-strain may, however, occur in emmetropia, and, as has been already said, more commonly along with low, rather than with high, degrees of refraction error or of muscular imbalance. It follows, therefore, that relief of headache, sleeplessness, giddiness, and other reflex disorders, even when these are wholly the result of asthenopia, can be expected only after perfect correction of the optical errors. As a rule, minute defects cannot be detected except when the eyes are examined with the aid of a cycloplegic; and in children, a mydriatic should be habitually employed to relieve spasm of the ciliary muscle, to diminish congestion of the choroidal and retinal vessels, and to reveal the total amount of ametropia. The older the patient the less need is there to paralyse the ciliary muscle, but in every case where the result obtained is not satisfactory a cycloplegic ought to be employed, and any risk of the occurrence of glaucoma counteracted by instilling a drop of 1 per cent solution of eserin immediately after the examination of the eyes is completed. Gould strongly insists that, in many cases, eyes at first pronounced perfect have been demonstrated by careful measurement under cycloplegics to be ametropic, and that subsequently the patients obtained complete relief by the use of suitable glasses. Donders stated that as long as astigmatism does not essentially diminish the acuteness of vision, the condition of the eye may be regarded as normal; but obviously, although that may be quite true in regard to the majority of people, it may not be true in regard to those of highly nervous temperament. The indirect effects of anomalies of refraction vary greatly in different individuals. It is common experience that many never complain at all, although on examination the eyes are found to be very defective optically; while others, in whom an error of refraction can be discovered only after most careful examination, complain of symptoms of extreme severity. Neurasthenia makes glasses imperative if any error of refraction exists, and in such cases the use of spectacles is a valuable therapeutic measure, because the cure of the patient is aided by the removal of one cause of irritation to the nervous system. It goes without saying, however, that if good results are to be obtained, thoroughness and exactness in the measurement of the eyes are absolutely essential. I therefore strongly dissent from the suggestion made in the recent Report of the Medical Officer of the School Board of London, that the exact correction of ametropia in young children by sphero-cylinders is scarcely necessary; for, on the contrary, without thoroughness there can be no efficient treatment, and it is well known not only that it is from the ranks of the astigmatic children that the short-sighted are recruited, but also that unsuitable spectacles are a very frequent cause of eye-strain. As Gould says, "It is the little, the inconsiderable thing, in refraction work" upon which depends the relief of reflex symptoms.

The prescription of spectacles, although essential and all-important, must not, however, be regarded as the whole treatment. It is not enough, more especially when one is dealing with the young, simply to adjust glasses suitable for the correction of the error of refraction. A quick estimate must at the same time be made of the patient's general strength, for it is most important to remember that though the demand for work made upon the ciliary and the extra-ocular muscles may not be unreasonably great in itself, yet it may be altogether excessive in relation to the individual in whom it is made. While, therefore, the error of refraction must always be carefully corrected, so that the ciliary muscle may do its duty under the best possible conditions, every effort should also be made to develop and strengthen the whole muscular system, by sufficiency of proper food, by drill, by exercise on the bicycle or preferably on horseback, and by an active out-door life.

Among opticians are some who call themselves "Refractionists" or "Optologists," and they of late have tried to promulgate the idea that "spectacles concern the optical part of the eye only and have nothing to do with disease." There can be no greater fallacy than that, for under no circumstances can the living eye be treated simply as an optical instrument. It is not only in the body but it is also of the body, and the proper treatment of its optical defects requires the physician's skill just as much as does the treatment of its diseases. It must never be forgotten that in the eye, just as in any other part of the body, the limits of muscular capacity must be respected, and the amount of work to be done must be regulated accordingly. Day after day children are sent by their teachers from the poorest schools of Glasgow to the Ophthalmic Institution "to get spectacles." In nearly every case an error of refraction exists, but in many it is so slight that in all probability it would cause no trouble were the general health satisfactory. Most of these children are underfed, live in unsanitary houses, are the victims of unwholesome habits, and are in consequence physically unfit to bear the strain of continuous school-work. Obviously, under these circumstances, it is wiser to prescribe rest for the eye than to supply glasses which, by the relief they afford, encourage the child to struggle, only to have afterwards, under the stress and strain of preparation for the Government inspection, a more serious breakdown. There is no doubt whatever that there are many children attending school who are, from want of proper nourishment, physically unfit to bear the mental strain they have to undergo, and who, instead of receiving intellectual gain, suffer actual physical damage in the attempt to instil knowledge into their minds. It is in circumstances such as these that eye-strain is developed, and those structural changes set agoing which determine that variety of short-sight, which is so apt to be progressive, and to lead to permanent impairment in later life, from detachment of the retina, from hæmorrhages, from choroiditis, or from atrophy and degeneration of the macular region.

The gravity of this evil is undeniable, although the problem how to remedy it is by no means easy of solution. In a recent report on the results of his examination of the eyes of 750 Glasgow children attending Board Schools, Dr. Wright Thomson stated that 30·5 per cent had defective vision, and of these 10·6 per cent suffered from myopia; while among the Jews he found only 50 per cent to have normal vision, and 32·6 per cent to suffer from short-sight. The significant fact here is the high percentage of myopia produced under the strain imposed by the requirements of school life, and the seriousness of this state of affairs is emphasised by Risley, who found in the schools of Philadelphia that "60 per cent of the eyes with myopic astigmatism had choroidal atrophies or inflammations, usually at the temporal margins of the optic nerve; that 87 per cent exhibited varying forms of choroidal disease; and that 70 per cent were asthenopic." Dr. Thomson says further that out of a total of 3,630 children only 2 were wearing glasses, whereas 18 per cent of the Christian scholars, and 36 per cent of those of Jewish descent, were in urgent need of such help.

Similar work has been undertaken in other cities, and there is universal agreement among those that have engaged in such investigations that a clamant necessity exists for giving serious attention to the eyes of our school children. Reports from different localities are not only most desirable, but are absolutely necessary in order to arouse the attention of the public. Remedy will only be possible when School Boards are empowered to make provision for a systematic examination, by fully qualified medical experts, of all the children under their care. Much could be done if, as has been urged by Frank Allport, the Educational Authorities would, at the beginning of the school session every year, set apart one day on which the teachers, equipped with test types, printed instructions, and blank forms in which to fill in results, should examine their pupils individually. It would thus be possible to have a practically simultaneous test of the sight of every scholar in every class. Any not up to the normal standard could then be referred to a specialist appointed by the Board, who would determine the degree and the true nature of the visual defect. The parents should next be communicated with, but the Board ought to make it a duty to see that the eyes of these children are properly looked after. Many a child is thought to be stupid and backward, and is punished for being careless, when in reality it is merely suffering from defective sight, and only requires suitable spectacles to place it on an equal footing with other members of the class. In many instances, too, although glasses are prescribed, the parents, through poverty, ignorance, or carelessness, fail to provide them. The School Board ought, therefore, through the teachers, to make certain that spectacles are supplied, wherever necessary, and if the parents are really too poor to buy them, it should be made legal to provide them at the public expense. Were such a scheme carried out, the eyes of every child would be attended to, and the systematic enquiry and supervision would have a wholesome effect in stirring up careless parents to a proper sense of their duties and responsibilities. School life, even under the most favourable conditions, is apt to throw serious strain upon the eyes of a growing boy or girl; and parents, as well as teachers, require every now and then to be reminded that a child must be physically fit before it can be properly educated.

It is, moreover, even more important to prevent disease than to cure it, and much can be done in connection with school buildings themselves to combat the influences which act injuriously. The class-room should be large and well ventilated, and have one square foot of window-space to every five square feet of flooring. Light should be admitted from the scholar's left hand side, so as not to strike the face or cast shadows over the book. The seats and desks should be graduated in height to suit the size of the children, who are thereby encouraged to sit erect, and to avoid stooping and other faulty positions of the body. Many cases of spinal curvature are due to the constrained and uncomfortable attitude which, owing to the benches being too high or too low, school children are forced to maintain. All lesson books and music ought to be printed in clear, bold type, and the lines should be well leaded. The tasks ought to be varied, and so arranged that the power of accommodation is not taxed for long at one time—reading and writing being alternated with blackboard and oral instruction. The eyes require frequent intervals of rest, just as the mind needs times of recreation. Hence the importance of the play hour, and of the attention paid to physical culture in many of our best public schools. In my own experience, there is nothing of more value in checking the progress of myopia than a well-regulated course of Swedish gymnastics; and what is true of myopia, is equally true of every form of ametropia and imbalance of the ocular muscles.

Nor is the over-taxing of the eyes confined to children. Adults also are at fault, and seem to forget that, of all the muscles of the body, it is the little ciliary muscle which is most constantly in use. The hypermetropic eye is never at rest, but is always straining more or less intensely to form on the retina a clear picture of external objects. Some occupations tax the eyes almost continuously—*e.g.*, the work of students, clerks, typists, seamstresses, &c.—and the accommodation is often strained over fine sewing, drawn-thread work, embroidery, miniature painting, engraving, and similar tasks. Injurious as such occupations are to the eyes at any time—and Motais has said that typists are, from spasm of the ciliary muscle, often more myopic in the evening than in the morning—they are doubly so when they are carried on in a bad light, or when one is physically tired. How often do patients suffering from lack of nerve energy try to rest and read at the same time—for example, when invalids read in bed. They are attempting the impossible. The aching eyes and headache of which they usually complain are clearly due to nervous and muscular fatigue, and when there is any error of refraction the ciliary muscle, already weary, becomes quite incapable of meeting the call on it. Among the commonest accompaniments of eye-strain, more especially in the neurotic and the neurasthenic, are lithiasis and oxaluria, and in the treatment of the symptoms associated with persistent asthenopia the possible co-existence of functional disorder of the liver ought never to be overlooked. In such cases, although the appearances presented are very difficult to describe, and even more difficult to depict, the ophthalmoscope reveals a very characteristic picture. The whole background of the eye is too red, and the retinal vessels, more especially the veins, are turgid, tortuous, and rough in outline. There is a lack of normal transparency, and the whole fundus is distinctly pigmented, as if very fine black pepper had been dusted over it and then rubbed in so as to partially conceal it from view. As a rule, the optic disc is pink from congestion of its capillaries and smallest blood-vessels. The macula is deeper in colour than the parts around, and is in consequence very easily seen.

Patients who suffer from such forms of eye-strain and its effects are usually sent to the ophthalmic surgeon by the family doctor, or consult him for the headache on the recommendation of a friend, but they rarely come spontaneously to complain of defective sight. Almost invariably, however, careful examination discovers a low degree of ametropia, and perhaps in addition some latent inadequacy of the extra-ocular muscles. The head-pain is often accompanied by sleeplessness, is, as a rule, unilateral, usually very severe, and always aggravated by any steady use of the eyes—*e.g.*, in reading, sewing, shopping, looking at pictures in a gallery, watching the stage at a theatre, &c., &c. In a few instances the intense headache is preceded by the occurrence of coloured spectra, or by a transient attack of hemiopia, due to spasm of the retinal vessels. It would seem that although the ocular flaw is latent, yet it is capable of inducing sufficient irritation to determine a "nerve storm" in a patient predisposed to such disturbance owing to natural instability of the nervous system. Obviously, the first step in treatment ought to be to adjust glasses to restore both the refraction and the motility of the eyes to the normal; for until the primary cause of the nervous disturbance is removed, there is little chance of the symptoms being relieved by any medicines. While, however, the ocular causation should always be kept in mind, it ought also to be remembered that many factors may contribute, if not to cause, certainly at least to perpetuate, the irritability of the nervous system; and if treatment is to be rational and thorough, it must not under-estimate the importance of any of them, but take each and all into careful consideration, and so look at the whole condition in due perspective. The urine ought in every case to be examined both chemically and microscopically, for the results thus obtained will often afford valuable therapeutic suggestions. As evidence of defective metabolism is very frequently found, it is usually necessary to give careful directions regarding diet. These, however, should not be stereotyped, but must be modified to suit the requirements of the individual patient. What is one man's meat may be another man's poison—many people diet themselves to the verge of starvation. It is equally essential to promote free elimination of waste products, and in practice I get excellent results from the phosphate or sulphate of soda combined with potash or lithia, administered every morning, or night and morning, for several weeks. These salts may be prescribed in the effervescing form, and taken in a tumberful of either hot or cold water. The dose should be sufficient to act on the bowels, but must never purge. In neurotic patients the efficacy of the salines is greatly increased by combining them with a bromide, such as the hydrobromide of caffeine or Warner's preparation of bromo-soda. Lauder Brunton speaks highly of the good results obtained by the use of salicylate of soda with bromide of potassium—the former "to clear out waste products" and the latter "to quiet the nervous system." Founding on his large experience in the Casualty Department of St. Bartholomew's Hospital, he is of opinion that frontal headache associated with constipation is usually relieved by salines; that headache just above the eyebrows, not accompanied by constipation, is best treated by acids; and that a similar headache higher up on the forehead, just below the hairy scalp, is most benefited by the use of alkalies before meals; while vertical headache is usually due to anæmia, and is relieved most speedily by iron.

There is another group of cases in which the patients, who are generally women, complain that every attempt to use the eyes is accompanied by intense discomfort. The symptoms, one of which is usually great intolerance of light, are so distressing that the patient is quite unable to read or write, and in many cases abandons the attempt to take any active part in life, and thinks and speaks of little else than her ocular troubles. One frequently finds that health has originally been impaired by illness, by prolonged sick-nursing, or by some serious mental or moral shock, and that the asthenopia has come on during the period of convalescence. As a rule, the patient has consulted many ophthalmic surgeons, and has fallen a ready prey to the prescribing optician, but all in vain. She will often produce numerous pairs of spectacles, and in a calm, firm voice declare that not one of them is of the slightest use. Examination may detect an error in the refraction and motility of the eyes, and the patient may show signs of the gouty, or of the rheumatic, diathesis; but neither the use of carefully adjusted glasses, nor the most appropriate and painstaking treatment, affords the slightest relief. On the contrary, on each succeeding visit, the patient will express herself as feeling no better, and without any evidence of emotion will again tell a tale of endless suffering. She is always on the outlook for an opportunity to prove the doctor wrong and herself right; and although she may be most punctilious in taking her medicines, she has no belief whatever in their power to do her good. Obviously, in these cases the asthenopia is due to psychical causes, but it must not on that account be concluded that the distress is imaginary. On the contrary, I believe it to be very real and very intense; for just as consciousness of pain may be completely inhibited by psychical causes, so in a similar way it may be greatly intensified. Here, obviously, mental influences are among the most important means of cure, and the success obtained in any given case will be in direct proportion to the amount of faith the patient has in her doctor. The reality of the suffering makes it most difficult to withdraw the mind from it, but unless this can be accomplished, treatment will be of little avail. Change of air and scene, the use of galvanism and high-frequency currents, baths, and massage are most helpful; but after all it is the personality of the physician that counts for most. In short, it is the patient herself who requires treatment more than her disease; and successful therapeutic results can only be obtained if the doctor can inspire her with hope, and by and by convince her that she is being gradually and completely restored to health. If he be able to do this, he will have accomplished all that was necessary.

It has to-night been my aim to indicate the scope of my subject, and to arouse your interest in it, rather than to attempt to give you an exhaustive account of the evils which may arise from uncorrected errors of refraction. In conclusion, I would repeat that as eye-strain is very often the unsuspected cause of headache and many other nervous disorders, it is always most important that any ocular defects be corrected as soon as possible. While, however, this is a matter of the greatest moment, yet, in order that serious misinterpretation of symptoms may be avoided, it is equally essential that other co-existing causes be not neglected, nor their etiogical value under-estimated.

MYCOSES, WITH SPECIAL REFERENCE TO MYCOSIS OF THE EYEBALL.[1]

BY LESLIE BUCHANAN, M.D.,
Surgeon, the Glasgow Eye Infirmary.

IT is well known that mould fungi may, by their growth in various sites on the human body, give rise to different diseases of the skin (favus, ringworm, &c.) The moulds which cause these diseases are members of the lower order of mould fungi. They produce spores by fission of the threads of the mycelium; not, as do the members of the higher orders, by the development of special fruit-bearing organs. (Actinomycosis and its near relation, which is the cause of the "madura foot," are not true moulds, but probably are nearer to streptothrix.)

As mycosis of the eyeball is the result of the growth in its tissues of one of the higher moulds, such remarks as are made here upon the subject of mycosis in other organs will be understood to refer to the members of this class only.

Mycoses in general.—There are several sites in the human body in which a mould fungus may be found growing either as a saprophyte, as a parasite, or, as some think, as both. The most important of these are the ear (external auditory meatus and tympanic cavity), the nails, the larynx, the lungs, and the eye. It is considered by nearly all writers that the development of the organism in the first three of these sites is purely saprophytic; but there is considerable doubt as to the nature of the growth which is occasionally found in the lungs. Rolleston[2] says that pneumomycosis is a trade disease in Paris affecting pigeon-feeders, who masticate the grain themselves, and then, putting the bill of the birds into their mouths, squeeze the pulp into it. He also mentions hair-sorters who, using flour of rye to facilitate the separation of the hairs, are liable to be affected by a disease of the lungs, which is probably due to the inhalation of the spores of the mould. Bradford,[3] while quoting several facts regarding the subject, says that pneumomycosis is nearly always secondary to other diseases. Weichselbaum says that mycosis is found in the lungs, in old cavities, old hæmorrhagic infarcts, &c., and thinks that it is usually secondary. Gunther quotes a case in which a disease simulating tuberculosis in a bird was found to be due, apparently, to aspergillus fumigatus. Other writers have seen similar changes in the human subject. Bradford quotes a case in which a young agricultural labourer, previously healthy, died of a disease whose chief characteristic was suffocative dyspnœa, and in which *post-mortem* extreme emphysema was the only change found besides an extensive growth of aspergillus in the lungs. Experimentally, it is found that injection of the spores of aspergillus into rabbits produces not only disease of the lungs, but also of the kidneys, lymph glands, and Peyer's patches, in all of which positions the mycelium is found growing. Weichselbaum says that in all such cases necrosis of the tissue is found in close association with the mycelial growth, whilst—and this is an important point—fructifications are not found.

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[1] Read at a meeting of the Glasgow Medico-Chirurgical Society held on 13th May, 1904.

[2] Clifford Allbutt's *System of Medicine*, vol. v, p. 257.

[3] Allchin's *Manual of Medicine*, vol. i, p. 245.

Type of organism.—It is admitted that only a few of the various members of the higher order of moulds are capable of growth and reproduction at the temperature of the human body. All writers are agreed that aspergillus fumigatus is the most frequently met with, but opinions differ as to which is the next in order of frequency. Some think that aspergillus nigricans, whilst others that aspergillus flavescens can become parasitic in man. Halbertsma injected aspergillus flavescens into a rabbit, and produced abscess formation in which mycelial threads were found. Other experimenters, using penicillium glaucum, found that, after injection of the spores, mycelial growths followed in some but not in others. So far as mycosis of the eye is concerned, aspergillus fumigatus is the organism most commonly present (11 proved by culture), whilst aspergillus glaucus (1 proved), aspergillus nigricans (1 not proved), and penicillium glaucum (2 not proved) are only occasional occurrences.

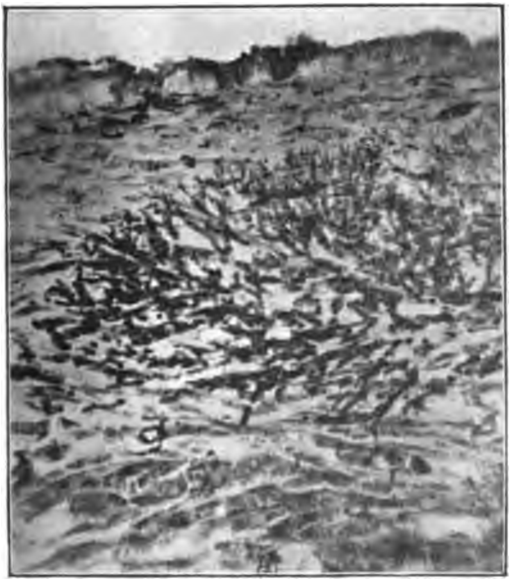
Mycosis of the eyeball.—I have been able to find records of 21 cases of mycosis of the eyeball, and a reference to another case (not, so far as can be found, recorded); of which 22 cases 14 are recorded in Germany, 2 in Scotland, 2 in United States of America, and 1 case each in Russia, France, and Italy. The majority were seen and recognised clinically as being cases of unusual character, and, suspicion being aroused, cultures were taken, and the true nature of the disease and organism identified. In the remaining cases, the presence of the mould was only discovered whilst the eye was being examined pathologically.

The first case was recorded by Leber in 1879. Being struck by unusual appearances in a case of ulcer of the cornea, he had scrapings from it examined, when the presence of the mould was discovered. Cultures subsequently made showed the mould to be aspergillus glaucus. The ulcer was the result of a blow on the eye by oat-chaff. The second case was seen by Uhthoff in 1882, as a purulent ulcer of the cornea, which was the result of a blow on the eye from a pear at a fruit-shaking. The next case was described at a meeting of the Pathological and Clinical Society of Glasgow in 1888, by Dr. Reid. This was a specially important case in so far as it was the first in which the fungus was found growing in the interior of the eye (in the anterior chamber, vitreous body, and chorioid). There was no history of injury in this case. In 1894 Fuchs reported a case of mycosis of the cornea in a miller. In 1896 Schirmer recorded another case in which the mould was growing in the interior of the eye along the track of a punctured wound. In the same year Uhthoff and Axenfeld described a case in which corneal mycosis followed upon earth being thrown into the eye, and in 1898 the same authors recorded a second case of this origin. In 1899 Nobbe saw a case in which the mycelium of a mould was found in the interior of the eye, having penetrated along the track of a wound, as in Schirmer's case.

By this time the attention of ophthalmic surgeons had been drawn to the importance of the subject, and the possibility that cases of this nature might easily be overlooked was recognised. In 1900 six cases are found recorded, the first by Basso in Italy, the next by Markow in Russia, a third by Wicherkeiwicz in Germany, and the remaining three by Gentilini in Germany. In 1901 two cases were described, one by Collomb and one by Moores Ball in America. In 1902 Romer recorded a case of mycosis of the interior of the eyeball following upon a wound by a bread-knife; and Ellet, in the United States, reported a case of corneal mycosis. In 1903 three cases were described—one of corneal mycosis by Kayser, one of mycosis affecting the interior of the eyeball by Kampherstein, and, lastly, one by the writer, from the clinique of the Glasgow Eye Infirmary, by the kindness of Dr. Hinshelwood.

The mode of infection.—It is highly probable that in all cases the spores of the fungus are conveyed to the position in which they grow by some agency connected with the soil. They cannot gain entrance to the tissues through an unbroken surface. Thus, in twelve of the cases of mycosis of the eye there is a clear history of injury with some object more or less definitely connected with agriculture—a chestnut, a pear, a straw, a piece of earth, oat-chaff, flour, and a bread-knife are amongst the number of these objects.

Regarding otomycosis, it has been pointed out to me by Dr. A. A. Gray that the affection is usually secondary to some mild inflammatory attack, which gives rise to serous discharge or to a suppurative process which is becoming quiescent. In such a case the spores of the mould, being brought to the ear either during syringing, by aërial conduction, or, possibly, by the finger, find a suitable nidus.



The illustration is taken from a photograph of a section of the cornea from Case 20. The growth of the mould in the necrotic area is clearly seen, and also the zone of inflammatory infiltration which surrounds it. (× 250.)

[We are indebted to the Council of the Ophthalmological Society for permission to utilise this block.]

The result of infection.—Experiments conducted by Leber showed that injection of the spores of the mould into the cornea of rabbits produced suppurative inflammation with great regularity. Subsequent experimenters have established the fact that this is not the result of accidental contamination of the culture with pus-forming organisms. It is said by some writers that the mould does not give rise to a toxin, but that the irritation is the result of the presence of the mycelium. This, probably, requires confirmation, as mechanical irritation rarely, if ever, sets up so severe an inflammatory process as is the usual accompaniment of mycosis. In the human eye the infection is often mixed, it is true, but pure cultures have been obtained in cases where there was suppuration and even necrosis of portion of the corneal tissue. Mycosis of the eye usually sets up suppurative inflammation, even if the infection is confined to the vitreous body, as in Kampherstein's case; and in cases of purely corneal mycosis, necrosis of the infected area is the result in the majority of cases. In cases of the latter class, a line of intense inflammatory reaction surrounds the slough and isolates it, thus limiting the sphere of action of the organism. When the necrotic mass is ultimately discharged, an ulcer is left, which, according to the history of the various cases, usually heals rapidly. In cases of mycosis of the lungs, necrosis of tissue takes place also, as already pointed out.

The clinical characters.—The clinical appearances of the eye in a case of corneal mycosis are usually those of ulcer with hypopyon. After a period of from six to ten days, the characteristic appearances of the disease are first seen. The floor of the ulcer becomes raised above the level of the surrounding cornea, and has a sharply defined edge. The surface of the raised portion is flat, and has a greyish-yellow matt appearance, as if dry. The size of this raised area increases for a week or so very slowly, and then remains of fairly constant size for a period of several weeks (months often). The hypopyon, which is present in almost all cases, varies in amount from day to day. It is of interest to note that in a few cases the appearances are, in the early stages, exactly those of fascicular keratitis (see table, cases 7 and 18). There is usually considerable pain and a moderate amount of discharge. The course of the disease is slow in the extreme, and is but little modified by medicinal applications. Treatment by actual cautery and by cutting away the infected area have proved more efficacious than any other. Probably, however, the disease tends to recovery by separation of the necrotic area and ultimate cicatrisation. There is no tendency to extension of the organism into neighbouring tissue or to generalisation.

Preparation of specimens and cultures.—So far as personal experience goes, the only stain which has much effect on the mycelium is logwood. The most satisfactory results were obtained by staining sections very deeply with Ehrlich's solution of hæmatoxylin, and neutralising freely with vapour of ammonia. This, after washing in water, gave a good and lasting stain. From the remarks of other writers upon the subject, it is clear that this is the general experience. Cultures may be made upon any medium, but Weichselbaum advises the use of alkaline media; also, the temperature usually maintained in a bacteriological thermostat—*i.e.*, 37·5° C.—is quite suitable.

In conclusion, it may not be superfluous to remark that a diagnosis as to the actual organism present can only be made from cultures on which fructifications are present.

A table showing some of the principal points of the various cases recorded has been prepared, and may prove useful to those interested in the subject.

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(*The side numbers correspond with those in the annexed table*).

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11. Gentilini, *Beiträge zur Augenheilk.*, H. 45, S. 115, 1900.
12. *Ibid.*
13. *Ibid.*
14. Wicherkiewicz, *Archiv für Augenheilk.*, B. 40, S. 361.
15. Collomb, *Thèse de Lyon*, 1901.
16. Ball, *La Clinique Ophthal.*, No. 21, 1901.
17. Romer, *Klin. Monatsbl.*, 50, 1902.
18. Kayser, *Klin. Monatsbl.*, 51, S. 50, 1903.
19. Kampherstein, *Klin. Monatsbl.*, 51, S. 151, 1903.
20. Buchanan, *Trans. Ophthalmolog. Soc. United Kingdom*, 1903.
21. Ellet, *Ophthalmic Review*, 1902, p. 582.
22. Fox, *Diseases of the Eye*, Philadelphia, U.S.A., 1904.

No.	Name.	History.	Nature.	Mould.	Result.
1	Leber, 1879.	Blow with oat-chaff; ulcer of cornea and hypopyon; scraped; leucoma.	Corneal mycosis.	Aspergillus glaucus.	Cured.
2	Berliner, 1882. Uhthoff, 1883.	Blow with a pear; ulcer of the cornea and hypopyon; necrosis.	Corneal mycosis.	Aspergillus; no culture.	Cured.
3	Reid, 1889.	No injury; eye blind for years.	Mycosis of cornea in ant. chamber, in vitreous, and choroid.	Penicillium glaucum; no culture.	Excision.
4	Fuchs, 1894.	General fever; ulcer of cornea; hypopyon (working as a miller).	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
5	Uhthoff & Axenfeld, 1896.	Earth thrown into the eye; ulcer of cornea; hypopyon; necrosis.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
6	Schirmer, 1896.	Injury twelve years before; ulcer of the cornea.	Corneal mycosis; mycelium in vitreous.	Aspergillus; no culture.	Excision.
7	Uhthoff & Axenfeld, 1898.	Injury by a piece of dirt; clinical picture of keratitis fascicularis.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
8	Nobbe, 1899.	Injury by knife forty days before; plastic cyclitis; phthisis bulbi.	Mycosis in scar, in vitreous, in retina, in choroid.	Aspergillus fumigatus? no culture.	Excision.
9	Basso, 1900.	No injury; disease of only one week; ulcer of cornea and hypopyon.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
10	Markow, 1900.	General tuberculosis? ulcer of cornea; anterior chamber abolished.	Corneal mycosis.	Aspergillus fumigatus; culture.	Phthisis bulbi.

11	Gentilini, 1900.	Agricultural worker. Ulcer of cornea; hypopyon; no injury.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
12	Gentilini, 1900.	A female, history as above.	Corneal mycosis.	Aspergillus fumigatus.	Cured.
13	Gentilini, 1900.	A male. Injury by a blow from a chestnut on eye; ulcer of cornea; hypopyon.	Corneal mycosis.	Aspergillus fumigatus.	Cured.
14	Wicherkiewicz, 1900.	Blow on eye from earth; ulcer of cornea and hypopyon.	Corneal mycosis.	Penicillium glaucum; culture.	Phthisis bulbi.
15	Collomb, 1901.	Dust blown into eye whilst shaking a cocoa sack; ulcer of cornea; hypopyon.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
16	Ball, 1901.	History indefinite; ulcer of cornea; black mass scraped out of ulcer.	Corneal mycosis.	Aspergillus type; no culture.	Cured.
17	Romer, 1902.	Injury with a bread-knife; wound healed; exudative cyclitis; eye excised.	Mycosis of ciliary body and vitreous.	Aspergillus fumigatus; culture.	Excision.
18	Kayser, 1903.	Injury by a piece of wood; clinical picture of keratitis fascicularis.	Corneal mycosis.	Aspergillus fumigatus; culture.	Cured.
19	Kampherstein, 1903.	History indefinite; probably injury as shown by pathological report.	Mycosis of vitreous body in an abscess.	Aspergillus; no culture.	Excision.
20	Buchanan, 1903.	Injury with a straw; ulcer and hypopyon.	Corneal mycosis.	Aspergillus; no culture.	Excision.
21	Ellet, 1902.	No details of the case known.	...	...	...
22	Fox, 1903.	No details of the case known.	...	...	...

CASE OF TRAUMATIC EXOPHTHALMUS PULSANS—LIGATURE OF COMMON CAROTID—CURE.[1]

By ROBERT KENNEDY, M.A., M.D., D.Sc.,

Assistant Surgeon to the Western Infirmary, Glasgow; Examiner in Surgery in the University of St. Andrews.

The patient, a man, aged 50, was sent to me in January, 1901, by Dr. Freeland Fergus, on account of pulsating exophthalmos of the right eye. The history of the case was as follows:—In May, 1900, while at his work, he was struck on the right side of the head by a large stone, whereby he was rendered completely unconscious for two days, and confined to the house for two months.

Immediately after the accident the following signs were present, viz., hæmorrhage from both ears, hæmorrhage from the nostrils, vomiting of blood, paralysis of the right side of the face. There was at this time no subconjunctival hæmorrhage or ecchymosis of the eyelids.

About the middle of July (two months after the accident), he noticed his right eye becoming red, starting at the outer canthus, and gradually spreading over the whole eye. At the same time he began to be troubled with noises in the head, which, he states, were of a whizzing character. He says that these sounds were worse on bending or lying down. He then noticed the eye commencing to protrude, and felt a beating in it, with occasional pain in the orbital region, and a constant sense of tension. Gradually his eyesight became more defective, until his vision in the right eye amounted to a mere perception of light.

The facial paralysis began evidently to clear up about November, 1900—*i.e.*, six months after the accident—but as yet the visible pulsation of the orbital contents had not commenced. This began in December, about seven months after the accident. It may be added that there was no history of syphilis, or anything likely to have affected the arteries.

Examination of the patient in January, 1901 (eight months after the accident).—The cardio-vascular system is apparently normal. Examination of the right eye shows proptosis about half an inch in degree. The eyeball is pulsatile, being protruded with the systole and retracted with the diastole. The conjunctiva is œdematous, and presents many enlarged and tortuous vessels, especially at each canthus where they are both engorged and tortuous, but more particularly at the inner canthus, where they form a protuberance. At no point do they exhibit pulsation. Both eyelids are slightly œdematous, but can be moved freely so as to cover the whole eyeball, when the sound eye is also at the same time closed. The upper eyelid presents a mass of varicose veins. The œdema extends to the superciliary region.

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[1] Read before a meeting of the Glasgow Medico-Chirurgical Society held on 13th May, 1904.

Traumatic exophthalmus pulsans.

The pupil varies in size, is slightly larger than that of the other eye, but reacts to light and to convergence.

There is no ophthalmoplegia present, the eyeball being movable in every direction, although, on account of the proptosis, not so freely as the other eye.

On pressing on the eyeball it can easily be pushed back into the orbit, the pulsation being meanwhile felt. On removing the pressure of the fingers, the eye is propelled forwards again with the pulsation. The pulsation is felt to be of a thrilling character. The tension of the intra-orbital contents diminishes when the common carotid is compressed, and at the same time the pulsation of the eye ceases.

On auscultation a loud whizzing systolic bruit is heard most audibly over the eyeball and superciliary region, but also conducted over the whole of the cranial and facial bones. This bruit ceases on compressing the carotid. It is, of course, perfectly audible to the patient himself.

The vision is ascertained to be limited to perception of light.

Slight paralysis of the right side of the face still persists. The position of the original injury is marked by a pigmented scar, 2 inches long, situated on the right parieto-frontal region.

Operation.—The patient was admitted to the Western Infirmary on 8th January, 1901, and on 12th January I ligatured the right common carotid, and this was followed immediately by cessation of pulsation and of the bruit, and by the eyeball presenting less tension and slightly less proptosis. Two days later the cornea became quite hazy, but this gradually cleared up.

The patient has never since had any recurrence of the pulsation, nor of the bruit, either subjective or objective, and the eye has retracted nearly to its normal position. The patient soon returned to his work, but his right eye never recovered vision, and the following is a report of the condition of his eyes by Dr. Freeland Fergus in May, 1904—*i.e.*, three years and four months after the operation :—

"There is slight exophthalmos of the right eye. The consensual reflex to light is present, the direct not. The reflex to convergence is slightly present. There are one or two pigmented spots on the cornea. There is no iritis.

"The optic nerve is obviously atrophied, but the vessels are not much constricted, nor is there any very intense pallor. The right nerve is distinctly paler than the left, and a large portion of it is occupied by an atrophic cup. The vision is mere perception of light, and the projection is very defective. It would seem as if the perception of light was confined to the neighbourhood of the macula. The field of vision of the left eye, roughly tested, does not seem limited in the least. It must, therefore, be inferred that the damage to the optic nerve, involving blindness, must be in front of the chiasma, and must be of such a nature as to destroy the conductivity of the optic nerve, not merely for sensations of sight, but also for the direct stimulation of the iris reflex.

"The movements of the eye do not seem to be much limited, any limitation which may be present being probably due to the proptosis.

"The third, fourth, and sixth nerves do not seem in the least affected, and the efferent impulses, coming to the right eye on stimulation of the left retina, are quite as in health; for the iris responds well to the consensual reflex.

"The vessels of the conjunctiva appear at places to be varicose, and it was this condition which first attracted my attention on seeing the patient at the infirmary. In the main they are not so tortuous or varicose as they were at an earlier period of the case. The sensibility of the conjunctiva does not seem diminished, in so far as it is very much the same as in the other eye. There is no pulsation of the orbital contents."

A considerable number of cases of exophthalmus pulsans have now been published (over 200 cases), but these are divisible into traumatic and idiopathic cases, and cases due to pulsatile tumours, and tumours receiving a communicated pulsation from the brain. The true form of exophthalmus pulsans is due to aneurysm, produced either traumatically or by disease of the artery. A number of cases have now been examined *post-mortem.* Of traumatic cases there have been at least six which came to *post-mortem* examination, viz., two cases by Nélaton, and one case each by Hirshfeld, Leber, Stuelp, and Slomann. In all of these cases the same lesion was found, viz., a tear in the internal carotid artery, opening into the cavernous sinus. This explains the great engorgement and tortuosity of the veins of the conjunctiva and the œdema, for such a lesion must produce its effects on the ophthalmic veins.

The *post-mortem* examinations of the idiopathic cases have shown a more varied condition in so far as there may be aneurysm of the internal carotid in the cavernous sinus, or the typical lesion after this aneurysm has burst into the cavernous sinus, or aneurysm of the ophthalmic artery.

The majority of cases are due to trauma. Thus, Slomann,[1] who has collected statistics of 175 cases, gives the proportion as 71 per cent traumatic, and 29 per cent spontaneous. Of course, many cases are published which were due to tumours, but these belong to a different category.

[1] *Centralblatt für Chirurgie,* 1900, p. 182.

A very common accompanying lesion in cases of exophthalmus pulsans is facial paralysis on the side of the eye lesion, and this is usually supposed to be associated with the fracture due to the trauma. The line of fracture has passed across the petrous portion of the temporal bone, injuring the facial nerve, and has then passed forwards and inwards to the sella turcica, causing there the injury to the carotid.

Slomann[1] records three cases of spontaneous exophthalmus pulsans, in which paralysis of the face was also present, and accounts for the occurrence by supposing that the engorgement of the superior and inferior petrosal sinuses, due to the blockage in the cavernous sinus, had compressed the facial nerve between them before its entry into the internal auditory meatus. In these cases the ligature of the common carotid cured not only the aneurysm, but also the paralysis. This, however, is rare, and the facial paralysis is usually produced at once by the injury, and the arterio-venous aneurysm is a secondary development.

As regards the treatment, some have been treated by compression of the common carotid, but this procedure has not been a great success. Ligature of the common carotid is a much more successful procedure. Thus, Slomann[1] collected 95 cases of ligature of the common carotid artery, of which 66 were cured or improved—*i.e.*, about 70 per cent—while in 53 cases treated by compression, only 15, or about 28 per cent, were cured or improved.

In some cases the procedure of compression as a minor measure has been tried first before proceeding to ligature the common carotid, but this, I think, is a great mistake; for, if the compression treatment should fail, it will at least have the effect of opening out the collateral circulation, and this will make the failure of the ligature also a not unlikely result.

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[1] *Loc. cit.*

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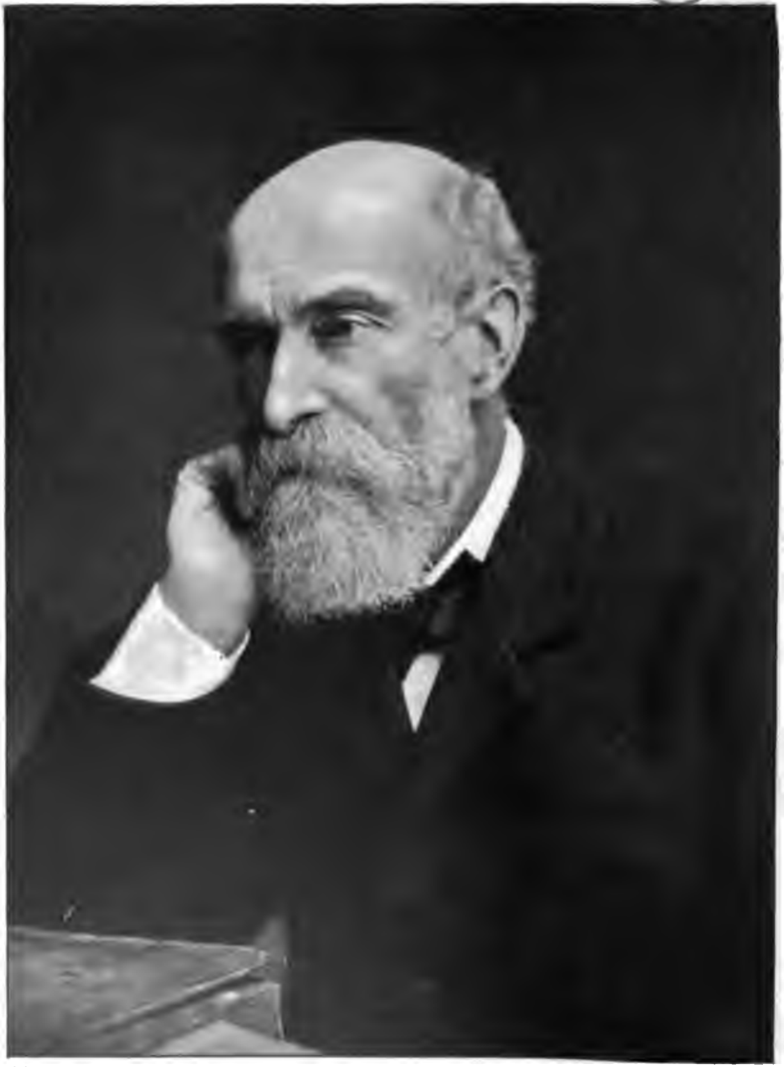

Photo. by] [Annan, Glasgow.

THE LATE DR. J. B. RUSSELL.

MEDICAL MEMBER OF THE LOCAL GOVERNMENT BOARD
FOR SCOTLAND.

Obituary.

JAMES BURN RUSSELL, M.D., LL.D.

Dr. James Burn Russell, Medical Member of the Local Government Board for Scotland, and formerly Medical Officer of Health of this city, died in Edinburgh on 22nd October last. He was well known to almost all our readers, and much has been written of himself and his work, both in the daily and the medical press, since his death took place. Nevertheless, we desire to say something in memory of him —something in appreciation of one who was the loved friend of many of us, as well as the Editor of this *Journal* during four of the earlier years of his professional life (1868-72).

He was born in Glasgow in 1837, but resided during his boyhood and youth in the neighbouring burgh of Rutherglen. Having finished his early education in the High School of Glasgow, he entered as a student in our University in the winter session 1854-55. Here he distinguished himself throughout, gaining numerous prizes in his classes; and it is interesting to note, in relation to the work which engaged his later years, how he seems specially to have been attracted by literary and scientific study, and how, in consequence, many of his prizes were gained in those two departments of intellectual exercise. Thus, in 1854-55 (Humanity—private), he was bracketed second for English verse composition, James Bryce (now the Right Honourable James Bryce, author of *The Holy Roman Empire*, &c.) being first; in 1855-56 (Logic —junior) he was awarded a prize for the best verses on the subject "Italy: A Sardinian Poet's Dream;" also a prize (Humanity—private) for English verse composition; also he was bracketed with James Bryce for a prize (Humanity— vacation exercises) given for the best translation into English verse of certain pieces of Catullus; in 1857-58 he gained a prize (Natural Philosophy) for Special Investigation on Electrolysis; in 1858-59 he won the University Silver Medal for the best essay on Vital Dynamics; and, in 1860-61, the Lord Rector's prize of £25 for the best essay on "The Probable Influence of Western Civilization on the Social, Political, and Moral Condition of China." He graduated B.A. in 1858, and began the study of medicine in the following winter session.

After a very distinguished career in all the classes of the medical curriculum, he graduated M.D., C.M., in 1862.

Of the professors under whom he studied, only four survive, all of them now in retirement. These are Lord Kelvin (lately elected Chancellor of the University), Lord Lister, Sir William Tennant Gairdner, and Professor Hugh Blackburn. To the first three of these, at least, he always felt himself specially indebted, and he retained an admiration and affectionate regard for them to the end of his life.

In 1858, in the interval between completing his Arts course and beginning that of Medicine, he was selected by Lord Kelvin (then Professor Sir William Thomson) to accompany him as one of his assistants in the laying of the Atlantic cable; and he was often led to remark, in after years, how much of the scientific method and spirit which guided his own particular work he owed to his early association with Lord Kelvin as pupil and assistant.

He was introduced to the study of disease when he became a member of Professor Lister's first course of lectures (1860-61) after his appointment to the Chair of Surgery in Glasgow. Lord Lister, who ever held Russell in high esteem, narrates an interesting fact of those student days in a recently-written letter. "One thing," he writes, "I remember about Russell that indicated the high opinion the students had of him. At the end of my first winter course, the class presented me with a document expressing their gratitude for my lectures, &c., and Russell was the man commissioned to read it to me. That class was an unusually large one, as the men of the fourth year attended it as well as those of the second and third years. Russell's selection by a class of so many senior students was really strong testimony of the esteem felt for him." We can guess that they probably had previously shown their esteem for him by securing his services in the composition of the address, for his reputation as a writer of English had, as we have seen, been abundantly established during his Arts course.

He was also a member of Professor W. T. Gairdner's first class after his appointment to the Chair of Medicine (1862-63), and the early acquaintance thus formed ripened on the side of both teacher and pupil into a life-long friendship. Not only was Sir William Gairdner his life-long friend, but he was, of all others, the man who may be said to have first inspired him with his enthusiasm in the study of preventive medicine, and to have been the means of introducing him to the practice of it. It is a pleasing and pathetic fact that two days after Russell's death, his old teacher, himself in feeble health, should have published in the *Scotsman* an appreciative notice of his friend and pupil above the initials "W. T. G." We make no excuse for quoting a few sentences from it here.

"One who knew him intimately during his whole career as a public man, and who, owing to peculiar circumstances, was particularly interested in the sanitary office which he held from 1872 onwards, desires herein to contribute a few facts and expressions of regard towards the appreciation which will be extensively felt and expressed in medical and other journals, not only in his native land, but all over the world. The writer of these lines may be said to have had in some degree the credit of introducing Dr. Russell into public life, when he was first appointed to be the Superintendent of the Fever Hospitals which had to be built and organized under pressure of a great epidemic in Glasgow in 1865. Never since that time has there been a moment's doubt as to the competency of Dr. Russell for the highest achievements of a career of administration, and the only regret which the writer experiences, and has repeatedly expressed to Dr. Russell himself and to others, is that no accessible collection of his memoirs on sanitary subjects—founded on his great experience, and permeated everywhere with a picturesqueness and readableness arising from an admirable literary style, guided by great experience and soundness of judgment—has ever been published. Even now it seems desirable that such a collection should be undertaken, if only anyone can be found who could exercise the necessary powers of selection among the multitude of printed, and possibly also manuscript, records that are in existence."

We trust that this suggestion, coming from the quarter it does, will not remain long unfulfilled.

The other salient facts and dates in Dr. Russell's life may be given in a few sentences. After acting as House Physician in the fever wards of the Glasgow Royal Infirmary and Resident Physician in those of the City Poorhouse, he was appointed by the Glasgow Town Council as Physician Superintendent of its fever hospitals—hospitals erected to grapple with a great epidemic of typhus in 1864-65.

After his residence in that institution came to an end, he was for a short time engaged in private practice; and, in 1868, married a daughter of the Rev. Peter Davidson, D.D., of Edinburgh. This lady died in 1884, leaving a young family of one son and two daughters, who now, twenty years later, are called upon to mourn the loss of their father.

In 1872, on the retiral of Professor Gairdner from his post of Medical Officer of Health of Glasgow, Dr. Russell was appointed to succeed him, and began in earnest the great work of his life. Few people at that time, if we except Dr. Gairdner and perhaps one or two others, saw in this appointment any special prospect of an unusually brilliant and useful career, while there were not wanting those who even criticised it adversely. As the sequel has proved, never were a man and an office more happily joined. For success in such a life he had just the necessary qualities, and that in a rare degree. It may be doubtful whether even the same remarkable qualities would have brought anything like a corresponding degree of success in private practice.

When the Local Government Board for Scotland was instituted in 1894, it was widely expected that Dr. Russell, *facile princeps* among sanitarians, would be nominated as its first medical member. This, however, did not take place, and it was not until 1898 that, on the resignation of the medical man nominated by the Secretary of State in 1894, he was offered and accepted the position.

In 1885, his *Alma Mater* conferred upon him the degree of LL.D. In 1895, the British Medical Association awarded him the Stewart Prize for his researches and writings on "The Origin, Spread, and Prevention of Epidemic Disease," and, four years later he received from the Royal College of Physicians of London the Bisset-Hawkins Memorial Medal in recognition of the work he had accomplished in the promotion of the public health, this being the first occasion on which the award was made. In 1898, he was appointed a member of the Commission on the Disposal of Sewage.

It would be difficult to analyse, especially in the space at our disposal, the qualities which made Dr. Russell the great and successful pioneer which he was in sanitary science, and which ultimately secured for him a world-wide and, there can be no doubt, a lasting fame. We have already indicated how valuable to him were his scientific spirit and instinct, as well as that command of a powerful and pleasing literary style, which makes his health reports and memoirs models of what such writings should be. But the real secret of his success lay deeper in the man.

For many years after he became Medical Officer of Health, he was probably the only one in Scotland whose whole time was devoted to the duties of such an office. This gave him at once a certain comparative outstanding position in this department of medical science and practice, which was still only in process of slow, if steady, development; and he must have been perpetually thrown upon his own resources when faced by doubts and difficulties of administration. He must have had often to travel across unexplored country, where all is now mapped and more than one well-made road is available. All this tended to render him, although naturally of a modest and unassertive spirit, resourceful and independent in judgment, as well as courageous in taking action when he felt assured of the justice and soundness of the position he had taken up.

A most lovable man in all the relations of domestic life and of private friendship, he truly added to the love he bore to individuals the love of all mankind. This was, perhaps, part of the love which he felt for his science. Every social and moral scheme for the amelioration of the condition of the masses, making, as all such must do, for the betterment of the public health, had in him a warm sympathiser. Yet he was no socialist or sentimental humanitarian. Dr. J. C. M'Vail, in a graceful tribute to Dr. Russell's memory in the *British Medical Journal* of 5th November, justly remarks—"In all social questions, and especially in municipal socialism, he took a deep interest. He was well read in socialistic literature, but all through its study his conviction remained unshaken that sanitation, thoroughly administered, can in the end achieve practically all that socialists aim at by other means."

One other trait which must be mentioned was his sensitive and chivalrous conscientiousness in the discharge of duty. He never insisted on others doing what he was not prepared to do himself. He constantly deplored, and did not hesitate at times to rebuke and denounce, the intemperance which he recognised as the cause of so much of the poverty, filth and disease with which his work brought him into contact, and he became and continued a total abstainer. He had often to insist upon poor parents sending their children ill of infectious disease to hospital, and so, when scarlet fever broke out in his own family, he sent the patient to Belvidere for treatment.

The present writer was once asked to sound him as to whether he would allow himself to be nominated as one of the Assessors of the University Council at the University Court. His reply was that he had long ago made up his mind never to accept an office or appointment, however honourable, which required attendance at meetings during the day. His time was not his own, and must be all devoted to his public work. He added that he was a Director of the Western Infirmary, of the Royal Hospital for Sick Children, of the Central

Dispensary, and of the Glasgow Sick Poor and Private Nursing Association. So far from there being any inconsistency of conduct in that fact, he desired, he said, by his interest in those institutions to show that he viewed general hospitals, children's hospitals, public dispensaries, and district nursing, as integral parts, or, at all events, valuable adjuvants of the public health administration of the city. And we know that the service which he rendered them all equally was of no halting or half-hearted kind.

It would be easy, and it would be a labour of love, to dilate at greater length on the high moral and mental characteristics of our deceased friend; but space forbids. He was buried on 26th October, in the Necropolis of Glasgow, in the presence of a company from which few of his old friends, private and official, were absent; while no board or institution with which he had been connected seemed to be unrepresented. It is seldom one can so certainly trace, as an observer could do on that occasion, the grave expression of a universal grief and regret in the faces of those who stood around the place where his body was laid.

We append a list of Dr. Russell's published writings. It may not be a complete one, but it includes all those which have found a place in the library of the Faculty of Physicians and Surgeons. It has been kindly drawn up by the librarian, Dr. Duncan.

Suggestions on the rational use of hospital statistics. 1866.
A clinical study of stimulation in typhus, with incidental remarks on its natural history. 1867.
Clinical observations on hydrate of chloral as a hypnotic in typhus. 1870.
On re-vaccination. 1871.
On the immediate results of the operations of the Glasgow Improvement Trust. 1875.
Address at the opening of the section of Public Medicine at the meeting of the British Medical Association. 1876.
Lectures on the theory and general prevention and control of infectious diseases; and on air, water-supply, sewage disposal, and food, by Wm. Wallace. 1879.
On the conveyance of the contagium of anthrax to hair factory workers. 1880.
Census, 1881, Glasgow: The decennial census as a basis for the statistics of intervening years. 1881.
The house: Health lecture. 1881.
The decade 1871-80: A sanitary retrospect. 1881.
The policy and practice of Glasgow in the management of epidemic diseases, with results. 1883.
Memorandum on the hospital accommodation for infectious diseases in Glasgow. 1883.

The vital statistics of Glasgow. 1886.
The children of the city (Edinburgh health lectures). 1886.
On some sociological aspects of sanitation: An address. 1887.
The house in relation to public health. 1887.
History of a peculiar outbreak of febrile disease in St. Mary's Industrial School for Boys. 1888.
City of Glasgow Fever and Small-pox Hospitals, Belvidere. 1888.
Life in one room. 1888.
"Ticketed houses" of Glasgow, with an interrogation of the facts for guidance towards the amelioration of the lives of their occupants. 1888.
Common lodging-houses. 1889.
Sanitation and social economics: An object lesson. 1889.
On the sanitary requirements of a dairy farm. 1889.
On some of the relations of the business of the dairy farmer to public health. 1890.
Census, 1891, Glasgow. Old Glasgow: Greater Glasgow, as constituted by the City of Glasgow Act, 1891, with map. 1891.
The evolution of the function of public health administration, as illustrated by the sanitary history of Glasgow. 1895.
Address on the physical laws which govern the distribution of infection. 1896.
Dead-meat inspection: The detective system v. the clearing-house system: An address. 1896.
On the prevention of tuberculosis. 1896.
Proper exposition of the modern doctrine of tuberculosis. 1896.
Statement for the meeting of Faculty, 1st November, 1897 (in reference to the management of the Western Infirmary). 1897.
Also a large number of official reports on the sanitary condition of Glasgow, Fever Hospital, typhoid fever, uncertified deaths, &c., &c.

H. C. C.

DONALD MACLEOD, M.D., J.P.

In our last issue we had to record the death of Dr. Wallace, of Greenock. Since then another veteran has passed away in the person of Dr. Macleod, of Kilmarnock. Dr. M'Alister of that town has favoured us with the following:—

"The oldest practitioner in Kilmarnock passed away on 10th November, at the ripe age of 78, in the person of Dr. Donald Macleod. Born in Inverness-shire, he graduated M.D. at the University of Glasgow in 1850, and settled in Kilmarnock immediately thereafter, having had an introduction to the town as an undergraduate in 1849, when he was engaged to take charge of patients during an epidemic of cholera. Being eager, painstaking, and very much interested in his profession, he soon built up a considerable practice in the town and surrounding villages, and continued in active work for the long period of fifty-two years.

"The conditions of medical practice when Dr. Macleod began work were very different from those obtaining now. He started his career in Kilmarnock in a flat of small dimensions in the principal street, and was lucky in getting early colliery appointments. These gave him long rounds in the country, and necessitated the purchase of a pony, on which he set out daily for a fourteen or fifteen mile ride, doing his town visits on foot before and after his country journey.

"His predilection for surgery was coincident with his start in practice, and his boldness in undertaking as a mere youth such operations as lithotomy in his patient's homes was strongly condemned by some of the elder medical brethren. Indeed, after operating on his first case in spite of the strong opposition of the older men, he was wont to say that he had his carpet bag packed to depart from the town if the result had proved unsuccessful.

"Dr. Macleod's strong points in medicine were his powers of accuracy in diagnosis and readiness in treatment. He always manifested an intense interest in his patients, and was greatly trusted by them.

"In his leisure, he occupied himself almost entirely in reading the various medical journals and newer medical literature, and was quick to apply the knowledge so gained both in his hospital and private practice. Reading and culling from medical books was, in fact, his hobby, and he would go into ecstasies over such a book as Gould's *Dictionary of Medicine*, spending whole evenings over it, and positively revelling in the frequent change of subject and the variety of accurate information.

"During his whole career he showed himself bold in his trials of new methods, and in the Kilmarnock Infirmary, with which he was connected from its institution in 1868, made trial of many procedures then advocated for the first time. He was a born surgeon like his senior, Dr. John Borland, and invariably preserved anything removed in the theatre for subsequent examination, during which he was fond of delivering short lectures to the nurses and stray students or visitors. In his private work he showed the same thorough interest, and in obscure or special cases with a fatal termination always endeavoured to have a *post-mortem* examination, even at the risk of offence to relatives.

"In his long life he practised among all sorts and conditions of people, and his knowledge of human nature was consequently extensive and peculiar. As a stickler for the observancy of medical etiquette, he often commented caustically on the methods of his fellow practitioners, but his own keen interest in 'cases' frequently led him into transgressions of the rules he was so much concerned in upholding.

"In later years his mature knowledge and large experience deservedly earned the respect and consideration of his fellows in the profession, and he was much employed as a consultant in the north of Ayrshire.

"The central thought of the eulogy delivered on his retiral from active work some years ago may now be repeated as his epitaph—'One man practised in medicine verily outweigheth many other men.'"

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—List of Degrees in Medicine conferred on 3rd November, 1904:—

DOCTORS OF MEDICINE (M.D.)

I.—HONOURS.

Harry Egerton Brown, M.B., Ch.B., Scotland. *Thesis*—"The brain in idiocy."

Edward Provan Cathcart, M.B., Ch.B., Scotland. *Thesis*—"On the occurrence of antibodies to ferments in the normal blood serum, with special reference to antitrypsine."

II.—WITH COMMENDATION.

Leonard Findlay, M.B., Ch.B., Scotland. *Thesis*—"Clinical and pathological study of a case of general tuberculosis, complicated by the presence of ganglionic neurogliomata in the brain, and a peculiar vacuolar degeneration of the myocardium."

James Dunlop Lickley, M.B., Ch.B., England. *Thesis*—"The human sternum."

Andrew Love, M.B., Ch.B., Scotland. *Thesis*—"An investigation into the leucocytosis of typhus fever, with observations on the changes present in the bone marrow, spleen, and lymphoid tissues."

Murdoch Macdonald, M.B., Ch.B., Scotland. *Thesis*—"A report on the clinical and bacteriological features of Vincent's angina, with notes of cases."

Walter Lewis Thomson, M.B., Ch.B., Scotland. *Thesis*—"Bacteriological investigation of a school outbreak of diphtheria, with special reference to the Hoffmann bacillus."

III.—ORDINARY DEGREE.

Daisy Annabelle Bennett (Mrs. M'Gregor), M.B., Ch.B., Scotland. *Thesis*—"The ætiology and treatment of oöphoritis."

Alexander Binning, M.B., Ch.B., Scotland. *Thesis*—"Some observations on the treatment of cough as a symptom in disease."

John Crawford, M.B., C.M., Scotland. *Thesis*—"Some clinical notes on cancer of the female genital tract, with cases."

John Divine, M.B., C.M., Scotland. *Thesis*—"Treatment by saline infusion: its principles and practice, with illustrative cases."

Archibald Donald, M.B., C.M., Scotland. *Thesis*—"The toxæmia of pregnancy, with special reference to the ætiology and treatment of puerperal eclampsia."

William Westwood Fyfe, M.B., C.M., Scotland. *Thesis*—"Clinical notes—neurological and surgical."

Edward William Reese Jones, M.B., Ch.B., Wales. *Thesis*—"Small-pox: a clinical study."

Frank Joseph Lochrane, M.B., Ch.B., Scotland. *Thesis*—"The relative frequency of pulmonary œdema and hydrothorax on the right side in heart failure: the probable cause of this frequency: the influence of certain treatment upon that cause, and its effects."

Donald Stewart MacColl, M.B., C.M., Scotland. *Thesis*—"Phthisis pulmonalis, and what it taught me."

John Paton, M.B., Ch.B., Scotland. *Thesis*—"Notes on recent outbreaks of small-pox in Govan and Kinning Park."

Andrew Taylor Ross, M.B., Ch.B., Scotland. *Thesis*—"On the action of adrenalin in the intestinal hæmorrhage of typhoid fever."

Robert Taylor, M.B., C.M., Scotland. *Thesis*—"Some general considerations and a plea relating to methods of applying power for traction in instrumental labour."

Charles Pinkerton Thomson, M.B., Ch.B., Scotland. *Thesis*—"The circulatory conditions in acute nephritis and granular contracted kidney."

William Brown Thomson, M.B., Ch.B., Scotland. *Thesis*—"A contribution to the etiology and hæmatology of rheumatic fever."

James Wilson, M.B., Ch.B., Scotland. *Thesis*—"Typhoid fever."

James John Taylor Young, M.B., C.M., Scotland. *Thesis*—"Diagnosis and management of cases of deformed pelves in general practice."

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY (M.B., CH.B.)

I.—COMMENDATION.

David James M‘Leish, M.A., B.Sc., Scotland.

II.—ORDINARY DEGREE.

Annie M‘Caig Black,	Scotland.
David Livingstone Graham,	,,
Donald John Gollan Grant,	,,
Margaret Hardy,	,,
Robert Thomson Leiper,	,,
Robert Clark M‘Guire,	,,
Jane Hamilton M‘Ilroy, M.A., B.Sc.,	Ireland.
Charles Gordon Mackay,	Scotland.
Roderick MacLeod,	Scotland.
David Stevenson Richmond,	,,
James Watson Richmond,	,,
Robert Thin Craig Robertson,	,,
John Stewart,	,,
John Unsworth,	England.
Janet Gardner Waddell,	Scotland.
George Wilson,	,,

ST. ANDREW'S AMBULANCE ASSOCIATION.—We have before us the twenty-first annual report of the Association. The report is of the highest interest in many ways, but perhaps that part of it dealing with the work done in Glasgow alone is most proper to be noted here. During the year ending 31st May, 1904, the calls on the wagons numbered 4,012. Of this total, 2,616 were to accidents, 1,303 to cases of illness; in 93 cases the wagons were not required on arrival. Of the calls to accidents, 966 were from the police offices, houses, and stairs; 822 were street accidents; 348 from public works; 282 from docks and wharves; and 198 from railways and stations. 1,917 cases were taken to the Royal, 1,052 to the Western, and 220 to the Victoria Infirmaries; 139 to the Maternity Hospital; and the remainder to their homes or other institutions. The wagons covered 14,681 miles during the year.

The wagons can, in cases of accident, be called for by any person, by day or night, free of all cost and responsibility. On receipt of an alarm sent by messenger, telegraph, or telephone, a wagon will be despatched at once to the scene of the accident. Should such accident happen in any of the principal centres of the Association, the wagon will be under the charge of a trained attendant, who, in the absence of a doctor, will temporarily dress the injuries, and accompany the injured person in the wagon to his own home or the nearest infirmary.

The part played by the police in the ambulance work of the city must not be forgotten. We find that, besides the St. Enoch's Station disaster, 2,315 cases were attended during year ending 30th April, 1904. Most of these are included in the figures given above for the wagons, so that one sees how the police force combines with the Association in carrying out this important work.

We have not space to notice the many other points in the report, such as time elapsing between receipt of message and arrival at accident; and numbers of classes held during the year (throughout Scotland). Those interested should apply for a copy of the report to the Secretary, Colonel Barnes, 176 West Regent Street.

THE above, which refers to the work done in Glasgow, is perhaps specially interesting at the present time, in view of the state of affairs in London. We have just received from Mr. Reginald Harrison a pamphlet[1] dealing with the ambulance question. The pamphlet is the sixth edition of an address delivered by the author in 1881, when President of the Liverpool Medical Institution. The address is probably well known to our readers. This issue differs, however, from its predecessors, in containing an account of the efforts that are being made by the Metropolitan Street Ambulance Association to secure for the county and city of London "an improved ambulance service, such as smaller cities at home and abroad have long enjoyed." The Association was formed in January of the present year, with Mr. Harrison as its president, and in May it sent a deputation to the London County Council. In the course of the proceedings, the idea was suggested that the ambulance and fire brigades should be worked conjointly. In the following month a deputation waited on the Police Committee of the Corporation of London. The suggestion of this deputation was that the police should be kept efficiently trained in first-aid work, so that they could take charge till the ambulance and its attendants arrived on the scene. It should be mentioned that both deputations had the cordial approval of the St. John Ambulance Association. So the matter stands at present; but we hope to hear before long of the Metropolis rising to the idea and organising what is so badly needed—a system of horse-ambulance to serve the pressing needs of its citizens.

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[1] *The Ambulance in Civil Life, and the Proceedings of the Metropolitan Ambulance Association.* By Reginald Harrison, F.R.C.S. London: Bale, Sons & Danielsson, Limited. 1904.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1903-1904.

Meeting XIII.—6th May, 1904.

The President, Dr. David Newman, *in the Chair.*

I.—CASE OF RECOVERY FROM SEVERE SYMPTOMS DUE TO CEREBELLAR TUMOUR.

By Dr. T. K. Monro and Dr. David Watson.

Among the children in the Blind Asylum, those whose loss of sight takes the form of what in pre-ophthalmoscopic days was termed amaurosis—those, namely, in whom the blindness is not due to disease of the external parts of the eye or of the transparent media—may be divided into two important classes. In the one, the blindness is due to the choroiditis or retinitis of inherited syphilis. In the other, it is due to optic atrophy, the sequel of optic neuritis which has developed in connection with intracranial disease. It is quite likely that, in a considerable proportion of cases, such disease has been tumour rather than meningitis, though it is seldom that the available history or the existing condition enables us definitely to say so. In the present case, however, there appears to be no room for doubt.

Cases of recovery from non-syphilitic intracranial tumour (including the myxoma and the tubercular growth) have been brought before this Society on previous occasions (3rd April, 1896; 22nd April, 1898), but they are sufficiently uncommon to be worthy of note in themselves, and it is interesting, in addition, to examine their condition at some interval of time after they leave hospital.

David D., æt. 9 next July, enjoyed good health till the beginning of 1902, when he was taken to hospital at Hamilton with scarlet fever. The disease ran a favourable course, but two weeks after his admission he began to take convulsive attacks, and he was kept in hospital for fourteen weeks altogether. No cause can be suggested for the trouble in the head, except the circumstance alleged by the boy that when he was in hospital he fell out of his bed three times.

About two weeks after his return from Hamilton Hospital, viz., about April, 1902, it was noticed that he could not see properly. He also suffered from occipital headache, which caused him to cry out, and he sometimes vomited. He also became unable to walk without assistance. No change was observed in the upper limbs or face, or in sensation. He was sent into the Children's Hospital in this city on account of the failure of vision, but his eyesight became worse, and he passed his evacuations into the bed. A month or two later, viz., in June, 1902, he took a single convulsion involving the face and all the limbs alike, and accompanied by loss of consciousness for about ten minutes. After that fit, his condition improved a good deal. He became able to walk better, and he got almost completely rid of the incontinence. Apart from the blindness and the disorder of gait, he was recently regarded by his father as being perfectly well.

He walks with his legs apart, and projects his feet, and especially that of the right side, in a kicking manner. Incoordination is seen when he attempts to stand with his feet close together. He is specially apt to fall backwards.

The power of grasping is alike in the two hands, but it was noted in November last that the right hand was not quite so strong as the left. In November, there was slight divergent strabismus, and the right eye could not be moved so far outwards as the left. At present (May) there is no divergence, and the defect of movement towards the right is a conjugate one. Post-neuritic atrophy is present in both eyes, but perception of light is retained. The head is unduly large, and has a horizontal circumference of 22½ inches. The condition of the knee-jerks is variable; in November, they were absent; last month (April) the right was present, though defective, while the left was normal; now, both are very defective, but especially the left. The intelligence is quite up to the average, but the boy is handicapped by the defect in the power of the hand.

Unfortunately, there has been some evidence of late that the tumour is not absolutely stationary. There have been attacks of frontal headache and sickness, or even vomiting. These come on chiefly after he has been visiting his home at Blantyre, and appear to be due to the excitement and fatigue of travelling, and not to unsuitable food. The varying character of the knee-jerks has probably the same significance, and it is also believed that the head is enlarging. The tumour is probably a tubercular growth in the cerebellum. There is, however, no definite history of tuberculosis in the family; and no disease of the cervical or axillary glands, or of the lungs, has been detected in the patient himself.

II.—THE TREATMENT OF DULNESS OF HEARING AND SUBJECTIVE NOISES IN THE EARS BY HIGH-FREQUENCY CURRENTS.

By Dr. J. Galbraith Connal and Dr. James R. Riddell.

The following observations were made in conjunction with Dr. James R. Riddell, medical electrician to the Glasgow Royal Infirmary, to determine, if possible, the influence of high-frequency currents in the treatment of dulness of hearing and subjective noises in the ears.

The cases were not selected in the sense of being considered to be cases favourable for treatment. In every one of them other methods of treatment had been employed, but found ineffectual. For instance, in chronic dry catarrh of the middle ear, catheterisation of the Eustachian tube or inflation of the middle ear by Politzer's bag had been tried. In nearly all cases complaining of tinnitus aurium, drugs, such as the bromides, hydrobromic acid, or strychnine, had been used unsuccessfully. In addition, any nasal defect which might possibly have an influence on the aural condition was rectified.

If recognised methods of treatment failed to effect any improvement in the dulness of hearing or lessen the subjective noises, these patients were sent to Dr. Riddell.

It will therefore be seen that, for treatment by high-frequency currents, the cases were of a class not readily influenced by ordinary methods of treatment. Notes were taken of the tuning-fork reactions; the hearing distance of the watch was also noted, and this was checked after the treatment had been discontinued.

In all, forty patients were treated, but I have been unable to follow the results in eight of these. This leaves thirty-two cases.

1. *Chronic dry catarrh of the middle ear with secondary labyrinthine involvement* (six patients).—There was no improvement in any of them. Two patients, however, thought the tinnitus was slightly lessened.

2. *Chronic dry catarrh of the middle ear, without marked labyrinthine involvement* (fourteen cases).—Ten of these had tinnitus, and eight of these ten reported an improvement in the tinnitus, two being "much better." In only one case did the noise disappear entirely, namely, a female patient with tinnitus likened to steam escaping, and occasionally a beating or ticking sound. The noise persisted in the right ear, but ceased in the left ear for six weeks, when it recurred. In two of the fourteen cases, a fractional increase in the hearing (= up to one inch) was noted. This improvement may have been due to the lessening of the subjective sounds.

3. *Post-suppurative conditions of the middle ear (the purulent process having ceased), leaving a cicatrix or a dry perforation with or without calcareous deposit in the tympanic membrane* (seven cases).—Five had tinnitus, and four of these reported themselves as much better. In four cases there was a fractional improvement in the hearing noted.

4. *Sclerosis of the middle ear* (five cases).—One patient said she heard much better, but on testing with the watch the improvement was not apparent, though both the patient and her mother were emphatic that she heard much better. Unfortunately, in this case the hearing distance for the voice had not been noted previously. The other four patients reported an improvement in the hearing, which was confirmed on testing with the watch, the improvement being marked in three cases and slight in one. In one patient, who had complained of persistent tinnitus, like bells ringing, for four years, there has been no noise for the last four months, and the improvement noted in the hearing has been maintained. The

number of cases of this type (sclerosis) is too small to do more than suggest further investigation.

One case of primary labyrinthitis (traumatic) and one case of tinnitus without dulness of hearing derived no benefit from the treatment.

In trying to estimate the benefit obtained from the treatment by high-frequency currents, it must be remembered that the class of case chosen was one not readily amenable to treatment. The majority of the patients had chronic dry catarrh of the middle ear with, in some cases, secondary labyrinthine involvement. It is unnecessary to point out with what persistence these cases attend an ear clinique in the hope of getting some relief either from the dulness of hearing or the subjective noise. Hence it is necessary to allow for the mental factor in estimating the improvement said to be the result of treatment. Our methods of testing dulness of hearing, though not perfect, are fairly satisfactory, but, unfortunately, we have no means of testing either the accuracy or the extent of the subjective noise. With regard to the latter, we must accept the patient's statement.

I have asked Dr. Riddell to explain the method employed, and have to thank him for the interest he has taken in the investigation.

[This paper is fully reported in the *Journal of Laryngology* for August, 1904.]

Dr. Riddell said—Treatment of diseases of the ear by the currents of high-frequency may be carried out in various ways. The patient may be treated by general electrification (by autocondensation) or local application of the currents. It is, however, to be remembered that local applications have a certain general effect. It is not possible to make local applications without, to some extent, electrifying the patient generally. The local treatment may be carried out in several ways:—

1. By means of the effluve taken from the resonator applied to the side of the head. The multiple-point electrode is held as near to the patient as possible without producing sparking. At the same time, another electrode, in the shape of a flat metal disc, is grounded and pressed on the opposite side of the head. The purpose of the grounded electrode is to direct the path of the current through the ears.

2. By means of condenser electrodes. These consist of thin metal rods, covered with glass tubes which are closed at one end and mounted on suitable handles. They are attached one

to each end of the high-frequency solonoid, and introduced into the external auditory canal. It is probable that in this way the current is more completely concentrated on the ears.

3. By metal electrodes, placing one against each other, that is, by applying the currents "by derivation." This method is apt to be painful unless carefully done. It is not easy to say how the currents act.

It has been clearly shown by D'Arsonval and others that they have a profound effect on nutrition generally. Under their influence there is a great increase in the excretions and output of heat. D'Arsonval has shown that the output of body heat was raised in one of his experiments from 79·6 calories to 127·4 calories per hour. He also showed that the excretion of CO_2 rose from 17 litres to 37 litres per hour during electrification.

If the benefits derived depend on these properties, then the proper way of applying the treatment would be by general methods (autoconduction or autocondensation). There may, however, be other explanations. There is the great alteration in the circulation produced by the currents, not only on the general arterial tension, which is first lowered, then raised, and remains above the normal for some considerable time; but there is a marked local effect, the capillaries being greatly dilated.

There is another possible explanation, namely, there may be a fine mechanical vibration set up by the passage of the current. In connection with the supposed germicidal effect of this form of electricity, it has been suggested that cultures are rendered sterile simply by the mechanical vibration set up in the media.

On account of these properties—(1) alteration of local blood supply, and (2) mechanical vibration—local treatment may be expected to be more useful than general.

III.—PORTIONS OF THE SEED-CAPSULE OF AN APPLE WHICH WERE IMPACTED IN THE SUBGLOTTIC REGION OF THE LARYNX OF A CHILD 2 YEARS OLD.

By Dr. Walker Downie.

During the present session, I have brought before this Society two foreign bodies removed from the trachea by operation. To-night, I show you a third foreign body which I removed from the subglottic region of the larynx three months ago. I am constrained to do so on account of the nature of the foreign body, the position in which it became impacted, the solitary symptom which followed its intrusion, and the method by which it was removed.

The patient was a little girl, 2 years of age. Early in the forenoon of 10th February, the nurse observed that the child was breathing somewhat noisily. The mother was called to the nursery to see her. She found the child happy, with no evidence of distress or difficulty in breathing, and no change in her voice. The breathing was noisy, and there was no apparent reason for it being so. As the noise accompanying each respiration continued without intermission throughout the day, the doctor was sent for. Symptoms pointed to a catarrhal laryngitis, and the child was treated accordingly. Next day the child was neither better nor worse, and treatment was continued.

Further enquiries were then made as to the condition of the child prior to the onset of the noisy breathing. It was said that the child had been well in the morning, that its breathing had then been unaffected, and that nothing had occurred at breakfast. The child had had an apple in the early forenoon, and it was after this that the change in the breathing was first observed.

On Saturday (13th) I saw the child in consultation, when I was told the foregoing story. The child, a chubby little girl, was playing contentedly with her toys. She had no cough, her voice was clear, there was no evidence of difficulty in breathing, but her respirations were so noisy that they could be heard outside the room she occupied. The noise was of a croupy character, and accompanied both inspiration and expiration.

On examination with the laryngoscope, the larynx was seen to be normal, and no foreign body could be seen.

On auscultation, air was heard to enter both lungs equally as far as one could judge, but there was a little more diaphragmatic effort than is usual in a healthy child.

After my examination, I expressed the opinion that the noisy character of the respirations was probably due to the lodgment of a foreign body in the infraglottic region of the larynx or in the upper part of the trachea, and that the body was fixed. I suggested that it might be a portion of the fibrous seed-envelope of the apple—a likely thing to be inhaled, and, if inhaled to become impacted. I recommended that a strong expiratory effort should be induced by striking the child firmly on the back with the open hand while her body was bent forwards, and if this did not serve to dislodge the foreign body, that the trachea should then be opened.

The parents were averse to operative interference, for, while there was no improvement, there was practically very little increased disturbance. The doctor wrote on 21st February—"There is perhaps a little more distinct diminution in the respiratory murmur over the lungs posteriorly. There is certainly no more distress in breathing. There is no rise in temperature. The appetite is good, and she sleeps well. The character of the breathing has not altered in any way." Two days later, however, operation was decided upon, and the child was brought into a nursing home. On the morning of the 25th, the child's trachea was opened, and as soon as the rings were divided air filled both lungs fully, and there was no obstructive noise. No foreign body could be seen through the opening in the trachea, and it was clear that it was fixed at a point above the level of the incision.

A narrow strip of gauze was then passed through the opening in the trachea and up into the pharynx. The end was caught with forceps passed through the mouth, and the gauze slowly drawn upwards. Two or three inches only had been drawn through when two portions of the seed-envelope of an apple were caught in the meshes of the gauze and were withdrawn.

A tracheal tube was introduced and retained in position for twenty-four hours, after which the child made an uninterrupted recovery, and returned home on the seventh day after operation.

The foreign body had lain in the larynx for fifteen days.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Session 1903-1904.

Meeting IX.—25th May, 1904.

The President, Dr. J. Nigel Stark, *in the Chair.*

I.—SPECIMENS.

A. By Dr. J. M. Munro Kerr.

The most recent form of uterine dilator.

B. Dr. J. K. Kelly.

Specimens of tubal gestation.

C. By Dr. E. J. Miller (for Dr. Stuart Nairne).

1. *Left Fallopian tube and ovary.*—Tube is distended by dark brown blood-clot, which has undergone organisation. No trace of any ovum. Microscopical sections showed remains of chorionic villi in the midst of organised blood-clot.

Clinical history.—Mrs. P., æt. 39, ix-para, was admitted to the Glasgow Samaritan Hospital, on 23rd April, 1904, complaining of hæmorrhage from vagina intermittently during past five months.

History of present illness.—On 25th November, 1903, patient was delivered of a full-time child. Labour was precipitate; after-pains continued for ten days after delivery. Lochia were scanty, but continued for six weeks. After a fortnight's interval, hæmorrhage returned, and continued for ten weeks. Then, again a fortnight's interval, and the return of the hæmorrhage. Pain, meantime, had been present in the lower abdomen, but not severe. Suddenly, one day, she had a severe pain in the left side, as of something giving way, and at once she showed signs of collapse. Pain continued severe for a fortnight, then gradually became less severe. Hæmorrhage continued during all this period, profuse and clotted at first, then less profuse, until she was admitted to hospital, when discharge had practically ceased.

Operation (by Dr. Stuart Nairne, 29th April, 1904.)—Left appendages were found enlarged and adherent to uterus. There was no pelvic hæmatocele, but some dark clotted blood escaped, as the adhesions of the tube were broken down. The left tube and ovary were removed by transfixion, ligature, and section of the pedicle. The right appendages presented normal characters.

2. *Right Fallopian tube, much dilated, forming a hydrosalpinx.*—Tube forms a large thin-walled tumour of a typical retort-shape, distended with clear fluid, sealed at both extremities, and twisted upon itself.

Clinical history.—Mrs. H., æt. 36, was admitted to the Glasgow Samaritan Hospital on 11th April, 1904, complaining of pain in back and left iliac region of twelve years' duration, increasing in severity. Of ten pregnancies, two were at full-time, five at seventh month (all instrumental), and three at third month. Septic infection at third labour. At menstrual periods, menorrhagia and dysmenorrhœa.

Note.—No pain was complained of on the right side. The left appendages were found to be the seat of chronic ovario-salpingitis, and were also removed.

II.—NOTES ON A CASE OF SPONTANEOUS RUPTURE OF THE UTERUS, DURING PREGNANCY, THROUGH THE CICATRIX OF A CÆSAREAN SECTION WOUND.

By Dr. J. M. Munro Kerr.

The following is the history of the case which forms the subject of this communication :—

Mrs. M., iv-para, was admitted to the Glasgow Maternity Hospital on 26th January, 1904, with a view to having Cæsarean section performed for the second time. Two years previously I delivered her of a living male child by Cæsarean section. Here are my notes of the case on that occasion :—Mrs. M., iii-para, was admitted on 28th October, 1901, to the Glasgow Maternity Hospital. In both the previous labours the children were extracted with difficulty, and were dead. On the last occasion craniotomy had to be performed. The pelvis was of the flat rachitic type, the diagonal conjugate being 3¾ inches. There seemed to be little if any deformity in the transverse diameter. She was not in labour when admitted, but it came on twelve hours afterwards.

I intended to do symphysiotomy, and so allowed labour to go on until the os was fully dilated. When, however, that stage was reached it was found, on examining her and testing the relative size of the head and pelvis, that there was too great a disproportion between them to permit of symphysiotomy being done safely. I therefore choose Cæsarean section, and employed the fundal incision of Fritsch. I came right down on the placenta, which I removed before extracting the child. The child, which weighed 8 lb., was extracted very easily, and the uterine wound stitched with little trouble or bleeding. She was not sterilised.

She had a good deal of retching and vomiting during the first three days, but otherwise there were no unfavourable symptoms. The temperature was never above normal, and the pulse, after the first three days, was not accelerated. The wound healed by first intention, the stitches being taken out on the fourteenth day. She left the hospital on 30th November, both she and her baby being perfectly well.

The following note was made on her admission for the second operation:—As far as can be judged, the patient is now in her thirtieth week of pregnancy. She has maintained good health, and has suffered no special discomfort since she became pregnant. She is well nourished, and of good colour; her pulse is of good tension, regular in force and rhythm, and numbers 84 per minute. The abdomen is irregularly enlarged, the bulk of the swelling being to the right side. There is a medium scar of the previous Cæsarean operation. Fœtal movements are active, but the cardiac sounds are nowhere audible. The cervix is not taken up, but admits the tip of one finger.

After an enema, given about midnight, the patient complained of abdominal discomfort—slight pain in the epigastrium; this extended upwards and to the right. She mentioned the fact to the night nurse, but as the patient did not complain further and fell asleep, the nurse did not think it necessary to tell the house surgeon. She slept from about 12·30 till about 5 A.M., at which time a sanguineous discharge from the vagina was noticed, and slight pain in the right iliac region was complained of. At 7 A.M. the temperature was 97·6°, and the pulse 80. The pain had now spread over the abdomen, but was not very great; the pain was taken for painful uterine contractions. There was no sickness or vomiting. At 11 A.M., on making my ward visit, I spoke to the patient quite by accident, for no one considered her condition serious. I then found that there was considerable abdominal tenderness, and suggested to those present the possibility that the old uterine cicatrix had given way. As, however, the pulse was 84, regular, and of a good tension, I simply advised my house surgeon, Dr. Rogers, to go into the case and note the patient's condition carefully. An hour after I was summoned by him as the abdominal tenderness was now more marked, the pulse 90, the temperature subnormal, and the breathing more rapid. At this time the condition of the abdomen was as follows:—She lay with her feet slightly drawn up; on palpation, there was exquisite tenderness over the whole abdomen, more marked to the right and below the umbilicus; the pain also extended up to the right shoulder. On placing the hand over the abdomen one was struck with the readiness with which the fœtal parts were defined; above the umbilicus and slightly to the left of the middle line a limb could be made out, while the head lay towards the left iliac fossæ. Two tumours could not be differentiated; percussion gave a slightly dull note in the flanks. On vaginal examination, the tip of one finger could be pushed through the cervix, but the presenting part could not be felt; on withdrawing the finger, it was blood-stained. The pulse numbered 88. A sixth of a grain of strychnine was given, and the patient prepared for laparotomy. The patient was anæsthetised, and the abdomen opened along the previous incision. Immediately that was done a large quantity of dark-coloured blood escaped, and the intact membranes, with the placenta and enclosed fœtus, presented. The uterus lay retracted behind and down towards the pelvis. The membranes were opened into, and a full-time dead child extracted. The uterus was then examined, and found to have a transverse rupture extending over the highest part of the fundus, evidently through the cicatrix of the uterine wound of the previous Cæsarean section. There were only two adhesions, one to omentum and one to abdominal wall. The uterus was removed by supravaginal hysterectomy, the peritoneum being carefully brought over the stump. Finally, as much of the blood-clots present were removed, two pints of saline solution were introduced into the peritoneal cavity. After the operation, the patient was considerably depressed; the lips, cheeks, and extremities were blanched; the pulse was 126, small, easily obliterated, but regular. She soon improved, however; the following day the pulse was 120 and the temperature 98°. I need not trouble you with details of her progress, which was very satisfactory, except that on the second day after the operation she was troubled with a good deal of bronchitis, and on the third day had a faint, which, however, was relieved by the administration of strychnine hypodermically and sal volatile by the mouth. She was dismissed a month after the operation, perfectly well.

The case just described is one of peculiar interest, and that from several standpoints. From the report, you see that the true nature of the condition was not quite fully appreciated. I was inclined to think that the rupture was incomplete, and that the adhesions, which I presumed were present, but which did not exist, were limiting any effusion of blood. In this I was wrong; there was a large effusion of blood into the peritoneum, and the whole ovum was free in the abdominal cavity. In two other recent cases of complete rupture, very much the same features were present, only a slight alteration of pulse tension and rate, but no collapse. It is well to remember this, for one is apt to consider complete collapse an essential feature of the accident.

The rupture without doubt was right through the old cicatrix. The wound simply gave way. It did so, I doubt not quite quietly, the child being slowly born through the rent.

Dr. Murdoch Cameron, in the course of his remarks, said that he left the question of sterilisation to be decided by the patient herself. He adhered to the anterior incision, and used catgut for suturing. There was a risk of the cicatrix from a fundal incision rupturing.

Dr. Jardine had always had an antipathy to the fundal incision, and quoted cases from the *American Journal of Obstetrics*, showing the risk of rupture when this site had been chosen for opening the uterus.

III.—CASE OF DIAPHRAGMATIC HERNIA.

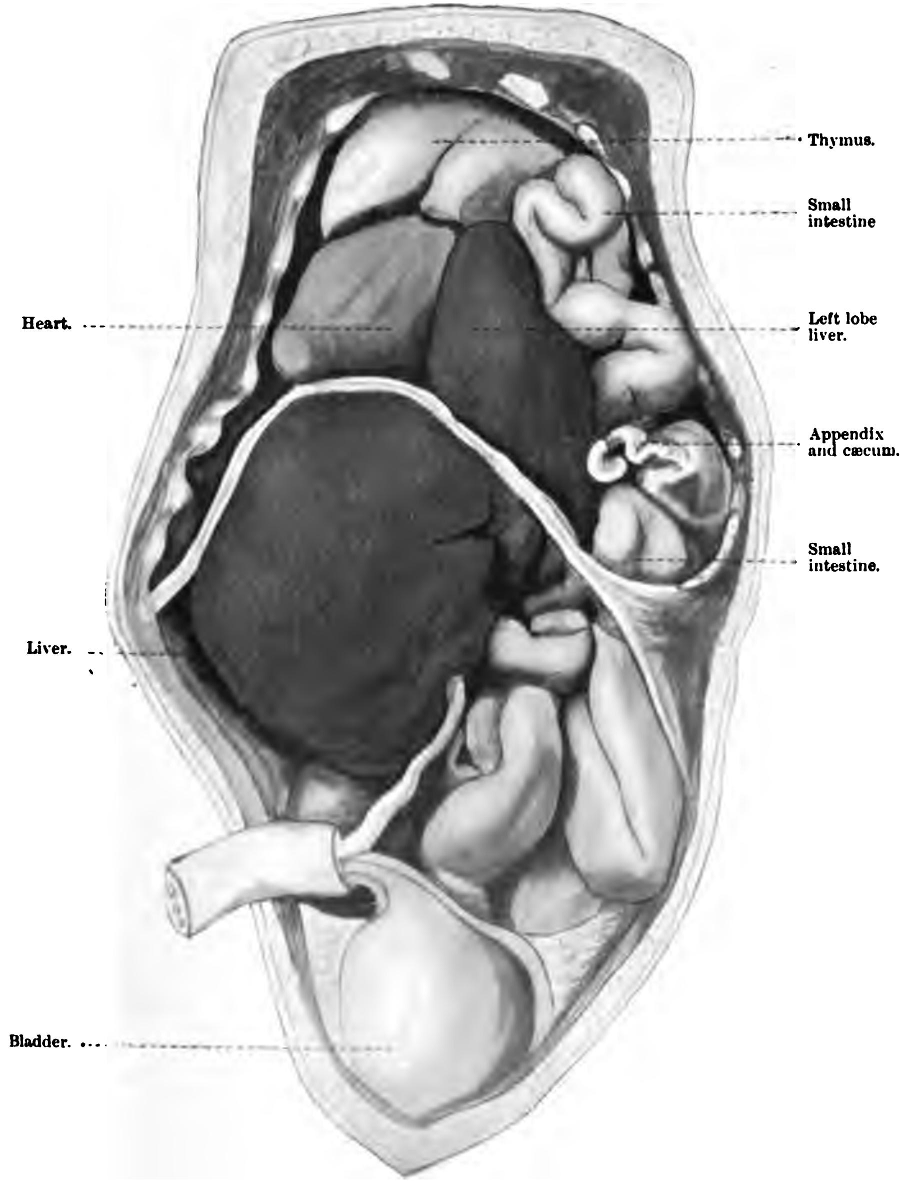
By Dr. H. Y. C. Taylor.

There are points of unique interest associated with the history of this case.

Mrs. W., a healthy young women of 21, with no history of uterine trouble, had, twelve months previously, after ten months of married life, given birth to a child of seven months' gestation. The doctor in attendance was unable, in spite of adopting the usual methods, to get the child to breathe. He noticed that the cardiac pulsations, which were strong, were confined to the right side of the chest in the right mammary line. The heart ceased to beat about fifteen minutes after birth. Unfortunately no *post-mortem* examination was made.

Twelve months after this, Mrs. W. again gave birth to a child (female) of seven months' gestation. There was no obvious reason for the birth being premature. The child was small, but apparently well developed; animation was suspended, and all efforts failed to make the child breathe. On careful examination it was noticed that cardiac pulsation was confined to the right side of the chest in the fourth, fifth, and sixth interspaces in the right mammary line. A *post-mortem* examination having been granted, the following abnormalities were discovered :—

While the right half of the diaphragm was normal, there was practically an entire absence of the left half of the diaphragm. The latter was represented by a thin cord-like



DR. TAYLOR'S CASE OF DIAPHRAGMATIC HERNIA.

band passing anteriorly from the anterior margin of the right half of diaphragm, along the margin of the ribs, to end posteriorly in the pillars of the diaphragm. The pillars of the diaphragm had a normal insertion.

On the left side of the body, therefore, the partition between the thorax and abdomen was represented by a lining consisting of diaphragmatic pleura aud peritoneum. (Microscopic examination revealed the entire absence of muscle cells.) This lining had been pushed up into the thorax by abdominal structures, so as to produce a true diaphragmatic hernia, the pleura and peritoneum forming the sac, and the contents consisting of various abdominal structures. The left lung, much atrophied and unexpanded, was pushed up by this hernia against the upper dorsal vertebræ.

The base of the heart and the large vessels were in normal position, but the heart was rotated to the right, so that the apex lay in the right side of the thorax, and concealed a large part of the right lung on its inner aspect. The heart was normal in size and structure. Right lung was somewhat small, and was unexpanded.

The contents of the hernial sac, which occupied practically the whole of the left side of the thorax, were situated as follows:—The stomach, covered by the sac, lay in close apposition to the anterior surface of left lung and to the upper dorsal vertebræ; anteriorly, the stomach was covered by the left lobe of the liver and a portion of small intestine. The left lobe of the liver occupied fully a third of the left side of the sac towards its inner aspect; the rest of the sac was occupied on the outer aspect, from above downwards, by small intestine, appendix, cæcum, and a small portion of ascending colon. Fully two-thirds of the small intestine lay in the hernial sac in the thorax. The appendix was 2 inches long, and was the structure most anteriorly situated in the sac. A third of the small intestine, most of the large intestine, the right lobe of the liver, the gall-bladder, and other organs occupied the abdominal cavity. The right supra-renal body was absent. The thymus was very large. The other organs were normal in structure.

MEETING X.—13TH JULY, 1904.

DR. N. T. BREWIS (President, Edinburgh Obstetrical Society) *in the Chair.*

DISCUSSION ON THE USE AND ABUSE OF THE MIDWIFERY FORCEPS.

A conjoint meeting with the Edinburgh Obstetrical Society was held in Edinburgh. A discussion on the "Use and Abuse of the Midwifery Forceps" was opened by Professor Kynoch, Dundee. Several Fellows of both Societies spoke.

A full report of the remarks appears in the *Transactions of the Edinburgh Obstetrical Society.*

REVIEWS.

Home-Nursing and Hygiene. By J. WALLACE ANDERSON, M.D., F.F.P.S.G., and GEORGE H. EDINGTON, M.D., F.F.P.S.G. Glasgow: St. Andrew's Ambulance Association. 1904.

THERE are at least two essentials to a good handbook of nursing, viz., that in its recommendations the comfort and care of the patient should be the primary consideration, and that its directions should be succinct and plain. A learned disquisition on the origin of evil and disease, and on the evolution of scientific nursing, is best reserved for the academical essay and the leisure of the lecture-room.

As most of our readers are aware, Dr. Anderson is an authority on "Medical Nursing," a book of lectures to nurses, bearing that title (third edition), having been published by him in 1888. The present volume, issued under the auspices of the St. Andrew's Ambulance Association, contains 156 pages, divided into ten chapters, wherein are discussed the whole practical details of the sickroom and the wants of its occupant. The directions are not only individually good, but they are suggestive further of the value of a knowledge of hygiene, and the necessity for attention, promptitude, cleanliness, and reasonable quiet in the treatment of the sick. The hints on ventilation, the preparation and administration of food and medicine, the sponging of the patient, and the changing of the bedclothing, are minute without being wearisome; and the bits of physiology introduced, such as the remarks on digestion, are intelligible to the most ordinary reader. The description of children's diseases gives to nurses and mothers indications for early diagnosis "till the doctor comes;" and the chapter on "Personal Health" shows how that desirable condition is to be maintained.

Remarks on the site and construction of houses, and on the influence on health of ground-air and ground-water, may be by some considered redundancies in a work of this kind; but, being brief, they are not out of place in an official handbook intended to be comprehensive. Dr. Anderson's easy style, with its allusions and humour, relieves and commends the medical doctrine.

Chapter X, which is written by Dr. Edington, is devoted to bandaging and minor surgery, systematic arrangements for operations, antiseptics, and the application of dressings. All the important bandages are suitably illustrated, and in brevity and clearness the letterpress description harmonises with the rest of the volume.

Nurses and guardians should carefully read the book (as Abernethy would have said), and have it beside them for reference on special occasions. The full index at the end will be a guide to details.

The Johns Hopkins Hospital Reports. Vol. XI, Nos. 1 to 9.
Baltimore: The Johns Hopkins Press. 1903.

THIS volume contains three papers. "Pneumothorax: A Historical, Clinical, and Experimental Study," by C. P. Emerson, A.B., M.D., comes first, and is the most thorough, erudite, and interesting treatment of this entire subject that it has been our lot to read. We would draw very special attention to the experimental work that this author has done on gas analysis, the distension of the affected side, and the cohesion of the pleuræ. It is superfluous to recommend all interested in pneumothorax to consult this monograph, for no writer or worker can afford to be ignorant of it.

A most interesting article is "Clinical Observations on Blood Pressure," by H. W. Cook, M.D., and J. B. Briggs, M.D., and all who are familiar with the writings of these authors, will be pleased to have this more complete work. As will be seen here, the clinical determination of blood pressure can afford, not only highly interesting, but most useful results, and to all clinicians, who still doubt the practicability or utility of such measurements, we recommend a perusal of this valuable paper with the utmost confidence that their scepticism will receive its *coup de grâce.*

The final communication is by M. B. Tinker, M.D., on "The Value of Tuberculin in Surgical Diagnosis," and is based on a study of the results of injections in four hundred cases. This author considers that it has yet to be proved that tuberculin rouses latent tuberculosis or disseminates the disease. He is able to conclude that tuberculin is harmless and of high diagnostic value. This paper should be read by all surgeons.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., and FREDERICK PETERSON, M.D. With 338 Illustrations. Fourth Edition, thoroughly revised. London: W. B. Saunders & Co. 1903.

THE marked popularity of this text-book must be gratifying to its authors and publishers. Among the subjects to which the writers call attention as having received special notice or revision in this edition are the healing of nerves, intermittent limping, zoster, epilepsy with myclonus, Kernig's sign, and astereognosis. A new section is contributed by Dr. Adolph Meyer to the part on mental diseases, for the purpose of bringing before the reader some recent German work in psychiatry. With its numerous illustrations and good letterpress, apart altogether from its contents, the work is well worthy of the careful attention of the medical reader.

What we Owe to Experiments on Animals.

The Case Against Antivivisection. By STEPHEN PAGET. London: The Scientific Press, Limited. 1904.

THESE two books are calculated to enhance Mr. Paget's already high reputation. He has an extensive knowledge of the subject upon which he writes, and has obviously given it much time and thought.

The first is a digest of "experiments on animals," a revised edition of which was published in 1903. The present pamphlet strikes us as a temperate statement of his case by one who has strong convictions, but it is not entirely unanswerable. Excellent as the argument is, the author—not continuously, but occasionally—assumes the partisan rather than the judicial attitude, and in this we think what is good might have been still better. It would probably be wise that writers in favour of experiments on animals under the regulations that exist in this country should dissociate themselves even more emphatically than they do from the atrocities that have been perpetrated in the past by Continental experimenters, in the thirst possibly for pure knowledge, but just as likely for notoriety.

In the second pamphlet Mr. Paget assumes the offensive, and attacks the antivivisection societies. It consists of four sections or chapters—(1) antivivisection societies, (2) literature, (3) arguments, (4) "our cause in Parliament." It is an able and severe indictment of antivivisectionist societies and their methods. These societies have been unfortunate in their leaders, some of whom by their unscrupulous methods might well be the ruin of the cause they advocate. Mr. Paget is to be heartily congratulated on the work he has done.

A System of Physiologic Therapeutics. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. VII: Mechanotherapy and Physical Education, including Massage and Exercise, by JOHN K. MITCHELL, M.D.; and Physical Education by Muscular Exercise, by LUTHER HALSEY GULICK, M.D. With 229 Illustrations. London: Rebman, Limited. 1904.

THOUGH this ambitious system of therapeutics is now drawing to a close, the editor is still able to furnish us with much interesting matter. The first part of this volume consists of two sections. One of these deals with massage, including its technique and effects, as well as the therapeutics of general and of local massage. The other section treats of exercise as a remedial measure, and includes the use of exercises for obesity, heart disease, deformities, and inco-ordination.

The second part of the volume discusses exercise and development and the materia gymnastica, with sports, games, and systems of gymnastics. The subject of dancing is not beneath the notice of the writer. There is a lengthy appendix on orthopædic apparatus, corrective manipulations in orthopædic surgery, and physical methods employed in ophthalmic therapeutics. The numerous illustrations ought to add much to the helpfulness of the volume, which we gladly commend to the careful attention of our readers.

Saunders' Year-Book of Medicine and Surgery. General Editor, GEORGE M. GOULD, M.D. Surgery. London: W. B. Saunders & Co. 1904.

THE current volume of this year-book sustains well the reputation of its predecessors.

Besides General Surgery, we have sections devoted to Obstetrics and Gynæcology, Orthopædics, Ophthalmology, and Diseases of the Nose, Throat, and Ear. The volume concludes with a section on Anatomy.

Undue condensation has been avoided; and the various articles quoted are given in a fashion which should make the volume a valuable aid to the busy reader.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

BY WALTER K. HUNTER, M.D., D.Sc.

A Clinical Study of the Diazo Reaction. By W. Taylor Cummings (*Univ. of Penna. Med. Bul.*, September, 1904).—In this paper the author has gathered together the statistics of numerous investigators in regard to the diazo reaction. These may be summarised as follows:—

Enteric fever, of 1,252 cases examined, a positive reaction was obtained in 86·8 per cent.

Measles, of 98 cases, a positive reaction in 87·7 per cent. (The reaction could be obtained during five days of the fever.)

Tuberculosis, of 1,768 cases, a reaction was obtained in 53·6 per cent.

Scarlet fever, of 87 cases, a reaction obtained in 34·4 per cent.

Croupous pneumonia, a reaction in 25 to 40 per cent.

Malaria, a reaction in 6 per cent.

Dr. Cummings then details his own observations, and he arrives at the following conclusions:—(1) The diazo reaction is of importance in differentiating a relapse from a complication in typhoid fever, reappearing with the former, but not with the latter. (2) It may be of much assistance in separating measles from German measles (in which it is never found). (3) It has considerable prognostic value in pulmonary tuberculosis. It does not appear till late in the disease and is usually present in cases running a rapid course. The average duration of life after the appearance of the reaction is six months, and when once it appears it persists until death. (4) the reaction at a dilution of 1 in 40 is of some value in the diagnosis of typhoid fever, but, upon employing a dilution of 1 in 150 other conditions are eliminated (except a small percentage of tuberculous cases), and the test is, therefore, considerably enhanced in value.

A Case of Intermittent Claudication. By C. W. Burr (*Amer. Med.*, 17th September 1904).—The patient was a negress, aged 50. She dated her illness from one day in the autumn of 1903, when she was seized suddenly with pain in the left leg, followed instantly by loss of power in it. There was no loss of consciousness, and in about half an hour power returned and she was able to walk home. A similar attack recurred in a week's time, then again after an interval of two weeks, and yet again after two more weeks had elapsed. Numbness and sudden pain were always the first symptoms, and complete loss of power followed immediately or in the course of a very few minutes. It was the left leg that was affected in each attack ; each attack came on while patient was walking, and the duration of each varied from about fifteen to sixty minutes ; in the intervals between, she felt quite well. The patient had no attack involving the left leg after November, 1903, but one day in December she was seized with sudden pain in the right heel, and she fell because of the loss of power in this leg. She was able to walk after an hour, but she was never entirely free of pain in the leg and never quite recovered the use of it. Several weeks before coming under observation (which was in May, 1904), the right leg became very painful and there was gradual loss of power in it, so that ultimately the patient had to take to bed, being no longer able to walk. Examination at this time showed the patient able to bend the right knee and hip joints, but she could not raise the leg from the bed and could not move the toes. Passive movement caused intense pain, but the loss of power was not simply from fear of the pain. There was no pulsation in the femoral artery, in the popliteal space, or in the vessels of the foot, while in the left leg pulsation was well marked. At this time, there was no sign of gangrene, and sensation was normal. There was no ankle-clonus, and Babinski's sign was absent. The knee-jerks were slightly exaggerated. There was no muscular atrophy in either leg. There were albumen and sugar in the urine. Later, gangrene developed in the right foot, and patient died within a few days of admission to hospital.

At the *post-mortem* examination, there was seen to be an interstitial nephritis, and a fairly widespread atheromatous condition of the vessels throughout the body. There was also extensive thrombosis in the common and external and internal iliac arteries.

In discussing the case, Dr. Burr points out that this condition is much commoner than is usually thought of, and that many of the less severe cases are grouped as "rheumatic," "neurasthenic," or as forms of peripheral neuritis. He believes that this intermittent lameness is of much the same nature as angina pectoris, for both are paroxysmal, in both there is pain, and in both endarteritis ; also, in each the paroxysm comes on most often after muscular exertion. The condition has been studied by Erb, who has seen forty-five cases in six years, and who has given it the name of diphasia angiosclerotica.

SURGERY.

By JOHN PATRICK, M.A., M.B.

On the Connection between Diseases of the Bile Ducts and Inflammatory Conditions of the Pancreas.—W. Körte (Berlin) discussed this subject at the German Surgical Society's Congress in April, 1904 (abstracted from the transactions published in the *Centralblatt für*

Chirurgie, 9th July). Inflammatory processes in the bile ducts may penetrate to the pancreas either through the wall of the common bile duct or by way of the common opening into the ampulla of Vater of the bile and pancreatic ducts. The author has repeated Vater's experiment of injecting staining fluid into the common bile duct, after ligature of the papilla, and observing it penetrate into Wirsung's duct. Obstruction of the papillary opening, therefore, by calculi, cicatrices, or tumours, permits the passage of infective secretion from the bile duct into the pancreatic duct, an observation already made by Opie.

Chronic inflammatory conditions of the head of the pancreas are frequently found in cholelithiasis, and subside on treatment by removal of gall-stones and drainage.

Acute inflammatory conditions of the pancreas have been observed by the author in seven cases of disease of bile ducts; two were abscesses in the head of the pancreas, two were peripancreatic abscesses, one an acute necrosis of adipose tissue around the pancreas, and two acute necrotic pancreatitis with necrosis of adipose tissue.

In six cases he considered that the cholecystitis was the immediate cause of the inflammation of the pancreas. The symptoms of the latter condition are often difficult to distinguish from those of disease of bile ducts; palpation of a tumour lying crosswise in the epigastrium is of greatest importance in the diagnosis. The results were bad—four deaths in seven cases; the remaining three recovered.

The author indicates three ways of reaching the head of the pancreas to free it--retroduodenal, from the front in the duodenal corner, and by opening the omental bursa between stomach and colon.

Two Recently Observed Cases of Pancreatitis. Bardenheuer (Köln).—The first case has an interest from the medico-legal point of view, in so far as an insignificant injury resulted in acute inflammation of the head of the pancreas, with subsequent dilatation of the stomach. The patient, a man, 40 years of age, fell across a beam, striking his right hypochondriac region. The injury was so slight, and he had so little pain, that he was able to work for ten days afterwards; then gradually came attacks of pain in the right hypochondrium, with vomiting, diarrhœa, and a quite noticeable wasting. There was no dulness to percussion, nor any other symptom of importance. The symptoms described persisted, and, two and a half months after the injury had been received, a diagnostic laparotomy was performed. The stomach was found dilated, the hepatic flexure of the colon drawn upwards and adherent to the under surface of the liver, the pyloric end of the stomach lying behind the colon. On relieving the colon from its adhesions, it was found to be firmly attached to the head of the pancreas, the latter being greatly enlarged and highly vascular, while the rest of the organ was atrophied. The colon was pulled downwards, and a gastro-enterostomy done. The subsequent progress of the case was good; the vomiting and diarrhœa disappeared.

The second case was one of pancreatic hæmorrhage. L. B., 44 years old, had been ill for two years; he was very stout, had atheromatous vessels, was a heavy beer drinker, and had had syphilis. From time to time, about every three months, he had attacks of gastralgia. From 1st December, 1903, the attacks had been more frequent, and accompanied by obstinate constipation, sometimes with nausea, and even vomiting. Dulness to percussion was not certain, but it was thought that there was increased resistance deep in the right side of the abdomen.

On the 8th March, 1904, median laparotomy was performed, and a retroperitoneal tumour found; the gastro-colic omentum was split and a large quantity of fluid liberated, partly coffee-ground material and partly fresh blood; the cavity was drained. The pancreas felt hard; the inner wall of the cavity was not smooth, but was covered with necrotic masses of fat. The subsequent course of the case was favourable; for fourteen days bloody secretion flowed, and after that time ferment was found. The daily outflow of pancreatic secretion was 200 grams. After four weeks the drainage-tube was gradually narrowed—at one time with resultant engorgement of secretion, at another with wholesale emptying forth of pancreatic juice. On 18th March the pancreas was exposed by a lumbar incision, and drainage effected from in front of the vertebral column. By 20th March the opening had closed to a narrow fistula, and complete healing was within sight.

In acute pancreatitis, especially in hæmorrhagic pancreatitis, or even in apoplexy of the pancreas, early operation, even in the acute stage, is demanded for the purpose of draining the retroperitoneal cavity.

V. Beck (Karlsruhe) narrates a case of a woman with supposed acute gastro-enteritis and cholecystitis, where he did a laparotomy. He found multiple adipose tissue necrosis and necrosis of the tail of the pancreas. Recovery followed, but three months later the patient returned with a tumour in the upper part of the abdomen, and at the operation pancreatic juice was found in the bursa omentalis.

MATERIA MEDICA AND THERAPEUTICS.

BY JOHN WAINMAN FINDLAY, M.D.

The Treatment of Acute Rheumatism by Salicylate of Sodium (*The Treatment of some Acute Visceral Inflammations.* By David B. Lees, M.D., F.R.C.P. London: John Murray. 1904).—Dr. Lees considers that the failure of salicylate of sodium to relieve some cases of acute rheumatism is due to the dose being too small. To a child, 6 to 10 years old, he gives 100 grains *per diem*, and rapidly increases the dose, if necessary, to 200 grains. Intolerance of the drug is usually remedied by abstinence from it for a few hours, when even larger doses than before may be taken without difficulty. Cardiac failure sometimes occurs in acute rheumatism, quite apart from the administration of the salicylate, and, in his opinion, cardiac complications are no contra-indication to its employment.

The only dangerous symptom is the occurrence of a peculiar deep inspiration, similar to the "air-hunger" of diabetes, and as this latter is probably the result of an acid intoxication, and has sometimes been relieved by the administration of large doses of alkalies, he recommends the administration of large doses of sodium bicarbonate with the salicylate. Salicylates alone were being administered in the only case of fatal poisoning which he has seen.—J. M. C.

Hyperidrosis Pedum (L. Weiss, *Jour. Amer. Med. Assoc.*, 1904, vol. xliii, p. 369).—Dr. Weiss recommends the following treatment:—The feet are well washed with borax water and soap, and the epithelial *débris* is then removed by pledgets of cotton soaked in benzine. They are then immersed for fifteen minutes in a 1 per cent solution of potassium permanganate, and afterwards are allowed to dry without any rubbing. Next morning they are well dusted with the following powder:—Potassii permanganatis 13, aluminis 1, talci 50, zinci oxidi, lapidis calaminaris, ana 18. The toes are kept separate by pledgets of absorbent cotton. The baths of permanganate are repeated every evening, the strength of the solution being increased to 2 per cent on the fourth, 3 per cent on the seventh, and 6 per cent on the twelfth day, a drachm of alum being added to each of the last three baths. The bathing is stopped after two weeks. The feet are dusted regularly afterwards with the powder, and during the day the toes are kept separated by absorbent cotton, and a blotting-paper sole is placed beneath the foot. Low cut shoes are recommended.—J. M. C.

Enésol—Salicylarsinate of Mercury: A New Injectable Mercurial Salt. Coignet (*Gaz. des. Hôp.*, 1904, No. 68, p. 681) and

Breton (*Gaz. des Hôp.*, 1904, No. 79, p. 784).—Enésol is obtained by causing a molecule of cacodylic acid to act on a molecule of basic salicylate of mercury; it contains 38·46 per cent of mercury, and 14·4 per cent of metalloidic arsenic. A centigramme (= ⅙ grain) of enésol is equivalent to 0·87 of a centigramme (= about ⅛ grain) of biniodide of mercury. Enésol is a white amorphous powder, soluble in water to the extent of 4 per cent, and is sterilisable, without dissociation, by heat. The mercury and the arsenic in this salt are in a latent or hidden state—that is to say, not detectable by the ordinary reactions for the metal or metalloid—as in the case of cyanide of mercury, the basic salicylate of mercury, cacodylic acid and the cacodylates. This property of latency, by diminishing the toxicity of the active principles of enésol, allows of its being employed in large doses. A further advantage claimed for it is that, joined to the specific action of the mercury there is obtained the dynamic action of the arsenic, so that the drug is at the same time both curative and tonic.

Both authors remark on the almost invariable absence of pain after intramuscular injections; subcutaneous injections (practised only by Breton) caused a slight transitory local pain, which could be avoided, however, if the injection were slowly performed. No local inflammatory reaction or erythema was ever observed, though the subcutaneous injections seemed to provoke the appearance of tiny nodes, which, however, caused neither pain nor discomfort. By injecting the solution very slowly, not only was the salt more rapidly absorbed, but this consecutive induration was, if not prevented, at least lessened. Coignet only employs intra-muscular injections, and both authors select the buttock as the site of election. Coignet injects 2 c.c. of a 3 per cent watery solution—equivalent to 6 centigrammes or almost a grain of salicylarsinate of mercury—every day. Breton, however, frequently only administered the drug in the same or in smaller doses every five, six, or even eight days, and gave no other treatment in the interval.

Patients with all the manifestations of syphilis were treated—hard chancres, secondary lesions (diverse eruptions, mucous patches), tertiary lesions (ecthyma, palmar psoriasis, ulcerating gummata, syphilitic arteritis, aortic aneurysms of syphilitic origin), parasyphilitic affections, as neurasthenia and tabes. Almost all the patients tolerated the drug perfectly, and it was considered that quicker results were obtained than with any other method or preparation of mercury. Breton, nevertheless, encountered a few exceptions to this general rule of tolerance, even in patients who had previously borne well intramuscular injections of the biniodide of mercury. These patients showed phenomena of cerebral irritation, viz., excitement, insomnia, and modifications of character as evidenced by violence, passion, and acts of wickedness. All these phenomena disappeared on discontinuing the enésol, or on giving it less frequently.

Special attention is drawn by Breton to the fact that certain patients of both sexes had, as a result of the injections, principally during the first twenty four hours, very marked genital excitement. For instance, a man, who was completely ataxic, and who had not had an erection for eight years, had erections followed by seminal emissions during a period of five days after injections of 3, and even of 1, centigramme of enésol.

Breton advises that enésol be used with caution in syphilitic affections of the nervous centres.—J. W. F.

DISEASES OF THE EAR.

By WALKER DOWNIE, M.B., F.F.P.S.G.

The Necessity of the Official Teaching of Otology in the Faculties of Medicine.—The Seventh International Otological Congress was held at Bordeaux, from the 1st to the 5th of August, under the presidency of Dr. E. J. Moure, of Bordeaux.

Professor Politzer opened the proceedings with a paper on the above subject, in which he described the existing state of the teaching of otology in the different faculties of medicine in Europe and America. The inequalities in the teaching are so great that he urges the absolute necessity of every student of medicine being instructed and examined in otology, in the interest and well-being of suffering humanity.

He was followed by Dr. Gradenigo, of Turin, who showed the inefficiency of the purely optional teaching of otology in the university. He urged the necessity of having examinations in otology made compulsory.

Notes on several of the many papers read at the Congress have appeared in the weekly medical papers, and a short *résumé* of all will be found in the *Journal of Laryngology* for October, 1904.

A Case of Thrombosis of the Jugular Bulb—Operation—Recovery. By Carl Koller, M.D. (*Archives of Otology*, October, 1904).—The patient, a girl of 21, had, after an acute tonsillitis, pain in the left ear, general headache, and high fever, with chilly sensations. Four days before admission to hospital, paracentesis of the left drum had been performed without evacuating any pus. On admission, there was tenderness over the mastoid area, with pronounced tenderness along the upper course of the jugular vein, and slight wry-neck. The tympanic membrane was not thickened, but was greenish in colour, and there was no discharge. The fundus of each eye showed marked venous congestion. After a preliminary paracentesis the mastoid was opened, granulations were found in the antrum and the posterior mastoid cells, and the sinus was, during this operation, accidentally opened. Symptoms of septic infection followed, patient had severe headache, with extreme pain in the upper course of the jugular vein. Ten days after the first operation the sigmoid sinus was curetted, and the jugular vein ligatured and excised. A culture of the thrombus, found in the sinus, was sterile. The temperature remained well over 102° F., pain in the head and on swallowing were complained of, and when the packing was removed from the sinus, pus welled out with a pulsating movement. Later, pus formed deep in the neck, and more than one abscess had to be searched for and opened. The free discharge of pus was complicated by symptoms of hypoglossal paralysis on the left side. Six weeks after the operation the pus suddenly ceased, the temperature became normal, and the patient went on to recovery.

A Case of Pulmonary Tuberculosis, with Interstitial Neuritis of both Cochlear Nerves, together with Persistent Embryonic Adhesions in the Scala Tympani. By Professor F. Siebenmann, of Bale (*Archives of Otology*, October, 1904).—In this paper are the details of a careful autopsy of a patient whose hearing had been slowly failing for twenty years, but who never had tinnitus, vertigo, otalgia, or otorrhœa, and who died of tubercular disease of the kidneys. The changes which were met with in both ears may be shortly stated as—(1) Slight cloudiness of both drum membranes; (2) a non-perforative middle-ear suppuration on the right side; (3) closure of the lower end of the scala tympani by bony connective tissue, and thickening of the bony foot-plate of the stapes, like a monstrosity, on the right side; (4) interstitial neuritis of both cochlear nerves.

Briefly reviewing the results of his own investigations, and those of others, Professor Siebenmann states his results as follows:—

Sometimes a polyneuritic degeneration of the acoustic nerve comes about in a hæmatogenous way, and appears simultaneously with extensive febrile tuberculous affections, which end perniciously. The cochlear nerve alone, or the whole acoustic trunk, may be affected. In these cases we find either a simple degeneration or an interstitial inflammatory affection; in both cases, however, the primary seat of the disease is located in the retro-labyrinthine section of the acoustic nerve, as far as we can assert from *post-mortem* results. Only in the rare cases, in which the patient survives the deafness for a long time, simple atrophic changes in the intra-labyrinthine section of the acoustic nerve develop in addition to this primary retro-labyrinthine disease of the trunk. The clinical symptoms of the ear consists in decrease in hearing on both sides, which, in rare cases, comes on by degrees, but in most cases, acutely, and then leads in a short time (days or weeks) to complete deafness. Often, but not always, there exist subjective noises, and when the vestibular nerve is affected, which is not frequent, the decrease in hearing is accompanied by violent vertigo.

DISEASES OF THE SKIN.

By J. WYLLIE NICOL, M.B., C.M.

Perineal Zoster. By Dr. Cushing. (*Johns Hopkins Hospital Bulletin*, May, 1904, p. 172).—An eruption rarely occurs over the sacral areas. According to Head's tabulation of 378 cases, in 7 instances only did the eruption have a sacral distribution, the lowest segment of which mention is made in his paper being the third sacral. Twice, in the writer's series of cases of trigeminal neurectomy, has the operation been followed by an outcrop of herpes. In the first case the distribution of the vesicles on the perineum was taken to represent a lesion of the fourth sacral posterior root ganglion. There was an accompanying vesiculation of the herpes facialis type on the non-anæsthetic side of the face. In the second case, sensory symptoms such as are the frequent precursors of herpes zoster, appeared after the operation, having a bilateral perineal distribution similar to that in the first case. The symptoms were interpreted as indicating a lesion of the posterior root ganglia, which did not suffice to cause vesiculation, "herpes zoster" without eruption, as described by James Mackenzie. This perineal disturbance was accompanied, as in the first case, by a quite extensive facial herpes, which again failed to encroach upon the skin-field rendered anæsthetic by the ganglion extirpation.

The pathology of herpes facialis seu febrilis has been the occasion of dispute. Many have thought the lesion to be quite distinct from that which produces true herpes zoster. Howard, however, has found lesions in the Gasserian ganglion in a case of common facial herpes accompanying pneumonia. This observation, together with those above cited, that after Gasserian ganglion extirpation an herpetic eruption does not occur over the resultant anæsthetic field, suffices to render it most probable that posterior root ganglion lesions are responsible for the common forms of herpes about the lips and nose as well as for zoster.

Note on a Small Outbreak of Tinea Trichophytina Cruris. By Dr. T. Colcott Fox (*British Journal of Dermatol.*, vol. xvi, No. 5).—A young medical man consulted Dr. Fox on account of an eruption on his groins. The case was a well-marked example of trichophytosis of the inguino-femoral regions, and the fungus was present in great abundance, but attempts to obtain pure cultures failed. The patient's brother and two male friends, who lived together in the same house, had become similarly affected, one after the other. No clue to the source of infection was obtained, or to the influences determining this type of ringworm eruption.

Dr. Fox refers to several of the similar outbreaks recorded in literature. Tilbury Fox saw a father, three sons, a daughter, the valet, and a visitor attacked in several months. The source was not traced, but the subsequent spread was probably by means of the laundry. G. H. Fox saw three brothers in one family with this affection, and two brothers in another. Stelwagon and Stahl described an epidemic in Philadelphia Hospital, where eighteen of the resident staff, several officials and several nurses, were attacked. Fontrein describes an epidemic of thirty cases in a marine medical service school.

Investigation of the Histological Changes produced in Lupus Vulgaris by the Light Treatment. By Dr. Wanscher (*Mitteilungen aus Finsen's Medicinske Lysinstitut*, Heft. 7).—This report is of interest, as the excised tissues had been treated in the way regularly employed at Finsen's Institute—seventy-minute exposures to a 60 ampere lamp with 8 cm. concentration apparatus. In a majority of the previously recorded investigations — by Möller, Pilnoff, Glebowski, Lerredde and Pautrier, Macleod—the treatments had been by some form of modified lamp with shorter exposure.

Dr. Wanscher made excisions of lupus tissue from the upper arm of a patient as follows:—Before treatment: one, eight, and fourteen days after one exposure; from a node of which only two small, deep, pigmented spots remained after six exposures, eighteen days after the last; and lastly, from a node completely healed in six exposures, twenty days after the last.

Comparing his results with those of others, he draws attention to the following points:—He found no support for Pilnoff's conjecture that the leucocytic infiltration of the nodule and of its cells was the chief factor in the favourable action of light. He found a very great hyperplasia of the epidermal cells fourteen days after one treatment, a condition mentioned by Leredde only (four and eight days after treatment). On the whole, his results agree with those of Glebowski and Macleod, especially as regards the cell vacuolation. He did not find an ingrowth of vessels into the nodule, as mentioned by Glebowski.

Dr. Wanscher's observations confirm those upon which all previous investigators are agreed, namely, that there takes place (1) a marked dilatation of the vessels with extravasation; (2) a cell necrosis, direct or indirect; (3) a new formation of connective tissue, of the origin of which nothing definite is in the meantime known.

A New Method of Treating Lupus. By Dr. Dreuw (*Münch. Medizin. Wochenschrift*, No. 15, 1904).—Under this title, Dr. Dreuw describes a method of using acid. hydrochlor. crud. which has given excellent results in his hands. The acid probably acts through the free chlorine which it contains, because remedies containing chlorine play an important part in the treatment of lupus. Unna employed acid. hydrochlor. crud. by painting it on the surface. Its action in this way was, however, too superficial, and the pain in many cases prevented its extended use. To overcome these two disadvantages, Dreuw freezes the part with ethyl chloride, and then cauterises thoroughly. Where the lupus infiltration is diffuse the acid is firmly rubbed in with a stick or glass rod covered with cotton-wool; where it is in isolated nodules, each of these is punctured by a pointed glass tube into which a little acid has been allowed to run up by capillary attraction. Before freezing, isolated nodules should be marked by some colouring material insoluble in water, such as black varnish. A renewed application of chloride of ethyl removes burning sensations after cauterising. In from two to eight days a crust forms, which falls off in from two to four weeks. After complete healing, the procedure is repeated.

The Treatment of Psoriasis by the General Practitioner. (*Münch. Medizin. Wochenschrift*, No. 20, 1904).—Dr. Dreuw strongly recommends the following combination:—Acid. salicyl. 10, chrysarobin 20, ol. rusci 20, sapon. virid. 25, vaselin 25. The alkali of the soap converts the chrysarobin into the chrysophanate. The ointment is rubbed into the psoriasis patches with a hard brush morning and night for four to six days. (After it has dried a little, it can be covered with starch or zinc powder.)

Then baths are taken daily for one to three days, and vaselin is rubbed in thoroughly two or three times a day. This course of about eight days is repeated as required. Beiersdorf has prepared a plastermull.

DENTAL SCIENCE.

By J. DOUGLAS BROWNLIE, M.B., Ch.B., L.D.S.

A New Fact concerning Nasmyth's Membrane.—Hopewell Smith, in a paper in *The Dental Surgeon* (5th November, 1904), describes the condition of the tooth obtained from a follicular odontome. The tooth in question, a left lower second pre-molar, was subjected to the action of phloroglucin and nitric acid, and found to be entirely without enamel cuticle. The author believes this to be the first occasion on which a tooth from a dentigerous cyst has been examined for this purpose.

While admitting the danger of drawing conclusions from a single case, Mr. Hopewell Smith considers it "extremely probable that it is the rule, that when dentigerous cysts occur there is concomitant absence, or failure of development of Nasmyth's membrane."

The paper then details the structure of the wall of dentigerous cysts, which consists of a connective tissue layer externally, a more vascular layer, which is also more cellular, lying more deeply, and internally a layer of epithelium, one or more cells deep. The fluid contained is usually thick and glairy.

The origin of the epithelial lining of these cysts is a point still in doubt. The author suggests that it is probably identical with the external epithelium of the enamel organ which, on completion of normal development, is converted into the cellular layer of Nasmyth's membrane. If this is correct, he concludes that the cyst contents are probably formed by the degeneration and liquefaction of the stellate reticulum. Continuing, he points out that at an early stage the external epithelium extends almost entirely round the tooth germ. The time of its disappearance is not known, but that part near the cusps or incisive edges of the teeth is the last to atrophy.

Reasoning by a process of exclusion, Mr. Hopewell Smith considers that of all the parts of the enamel organ, the stellate reticulum is that which is most likely to give rise to the fluid contents of a cyst. The external epithelium is discussed above; the internal epithelium atrophies, and loses its cellular nature on completion of the enamel; it forms the keratinous layer of Nasmyth's membrane. The stratum intermedium and stellate reticulum are thus left unaccounted for, and "of the former little is known concerning either its function or real anatomical relationships."

The author admits the difficulty of proving the correctness of any explanation of the anatomical origin of dentigerous cysts at present, but he submits the following points in favour of his view:—

1. The analogous formation of epithelial odontomes, which are believed to arise from irregular diverticula from, or unatrophied remnants of the *Zahnleiste* (tooth-band).
2. The similarity between the cells of an epithelial odontome which is about to break down and the cells of the stellate reticulum, especially when they are becoming aged.
3. The teeth found in dentigerous cysts are often only partially complete. This agrees with the fact that the stellate reticulum disappears early.

The paper concludes by reference to the possibility that the follicle may give origin to the cyst by development round one or more of the epithelial bodies which are found in the wall of the tooth sac. These, it is possible, might provide the epithelial lining of the cyst, but in that event Nasmyth's membrane would be found in situ on the contained tooth, which in the specimen examined was not the case.

The X-Rays in the Search for Prosthetic Apparatus.—The conclusions arrived at by Bergonié and Dunogier, and given in a paper translated in *Ash's Quarterly* (September, 1904), are of interest. The authors tested the relative opacity of the various colours of vulcanite used—the colouring matters are mainly metallic, sulphides, &c.—and state that under ordinary circumstances any dental prosthetic appliance may be found in the human body by means of the *x*-rays. Unfortunately, in another part of the paper, they qualify this statement by excluding black vulcanite (or ebonite), which is, as shown in the reproductions of their radiographs, more transparent than the other colours to the rays.

Books, Pamphlets, &c., Received.

An Introduction to Dermatology, by Norman Walker, M.D. With 49 Full-Page Plates and 50 Illustrations in the Text. Third Edition. Revised and Enlarged. Bristol: John Wright & Co. 1904. (9s. 6d. net.)

International Clinics: A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles, edited by A. O. J. Kelly, A.M., M.D. Vol. III. Fourteenth Series. 1904. London: J. B. Lippincott Company. 1904.

The Pocket Companion to the British Pharmacopœia, by Peter Wyatt Squire. London: J. & A. Churchill. 1904.

X-Rays: Their Employment in Cancer and other Diseases, by Richard J. Cowen, L.R.C.S.I., L.R.C.P.I. London: Henry J. Glaisher. 1904. (2s. 6d. net.)

A Guide to Anæsthetics, for the Student and General Practitioner, by Thomas D. Luke, M.B., F.R.C.S. With 45 Illustrations. Second Edition. Edinburgh: William Green & Sons. 1905.

Diseases of the Ear, for Practitioners and Students of Medicine, by James Kerr Love, M.D. With 54 Stereoscopic Photographs, 2 Coloured Plates, and many Illustrations. Bristol: John Wright & Co. 1904. (25s. net.)

The Transactions of the Edinburgh Obstetrical Society. Vol. XXIX. Session 1903-1904. Edinburgh: Oliver & Boyd. 1904.

The Ambulance in Civil Life and the Proceedings of the Metropolitan Street Ambulance Association, by Reginald Harrison, F.R.C.S. London: John Bale, Sons, & Danielsson, Ltd. 1904.

First Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum, by the Director, Andrew Balfour, M.D., B.Sc. Department of Education, Sudan Government, Khartoum. 1904.

Walsham's Handbook of Surgical Pathology, for the Use of Students in Pathological Museums. Third Edition. Revised and Enlarged, by Herbert J. Paterson, M.A., M.B. London: Baillière, Tindall & Cox. 1904. (10s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 19TH NOVEMBER, 1904.

	WEEK ENDING			
	Oct. 29.	Nov. 5.	Nov. 12.	Nov. 19.
Mean temperature, . .	49·6°	48·7°	42·7°	48·9°
Mean range of temperature between day and night, .	20·5°	19·9°	23·6°	18·8°
Number of days on which rain fell, ...	2	4	7	4
Amount of rainfall, . ins.	0·08	0·15	1·27	0·39
Deaths registered, ...	247	284	302	282
Death-rates, ...	16·1	18·6	19·7	18·4
Zymotic death-rates, . .	2·8	1·2	3·0	1·4
Pulmonary death-rates, .	5·0	5·6	6·7	6·7
DEATHS—				
Under 1 year, . . .	68	74	93	86
60 years and upwards, .	50	62	52	66
DEATHS FROM—				
Small-pox, ...	...	...	1*	...
Measles, ...	1	...	6	3
Scarlet fever, ...	1	...	1	...
Diphtheria, ...	1	3	1	...
Whooping-cough, . .	8	12	14	14
Fever, ...	2	1	...	...
Diarrhœa, ...	17	10	18	9
Croup and laryngitis, .	...	...	1	3
Bronchitis, pneumonia, and pleurisy, ...	56	60	79	84
CASES REPORTED—				
Small-pox, ...	...	...	...	1
Diphtheria and membranous croup, ...	15	18	15	24
Erysipelas, ...	27	25	24	19
Scarlet fever, ...	31	34	21	24
Typhus fever, ...	...	2	...	...
Enteric fever, ...	13	15	16	11
Continued fever, . . .	1	...	...	1
Puerperal fever, . . .	2	1	3	...
Measles,† . . .	85	95	70	73

* 1 Chicken-pox. † Measles not notifiable.

SANITARY CHAMBERS.
GLASGOW, *26th November, 1904.*

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